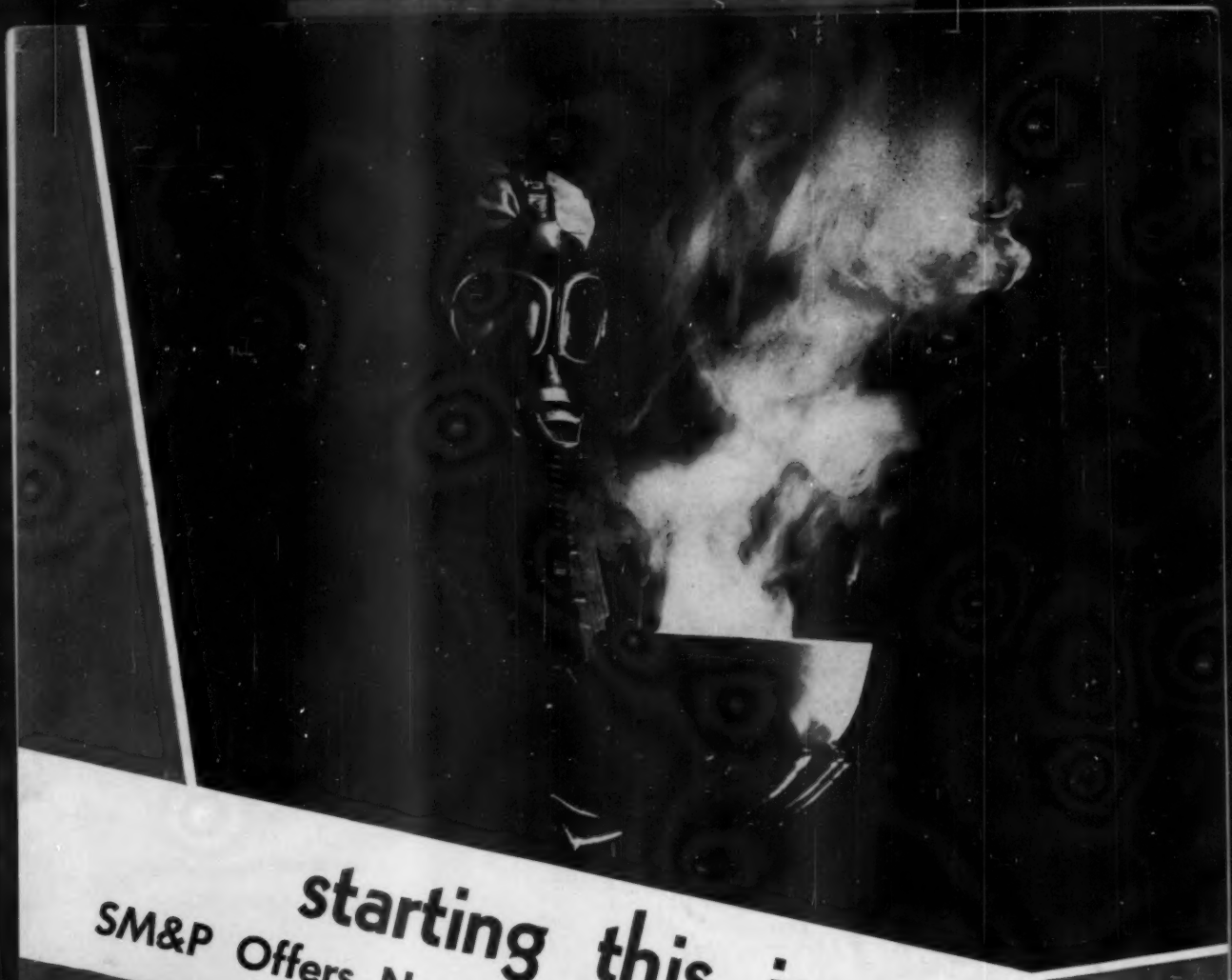

starting this issue

SM&P Offers New Health Service (See page 10)

Safety Maintenance and Production

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • OCTOBER, 1955 • 50¢

VI-LAN CLEAN

SELF-SERVICE UNIT

No. 815

The dispensing service unit that is well nigh INDISPENSIBLE

VI-LAN CLEAN
fortified with Actamer
the wonderful bacteriostat created
by the Monsanto Chemical Co.

EQUIPPED FOR SCOTT INDUSTRIAL WIPERS

Now You Can Actually Control Dermatitis

The illustration shows the stature of this new VI-LAN CLEAN SELF-SERVICE UNIT, No. 815, equipped with two VI-LAN CLEAN dispensers, two No. 939 Industrial Wiper Brackets for SCOTT INDUSTRIAL WIPERS, and a waste disposal bin of large capacity. This dependable and ever-ready on-the-job washroom service unit, which may be used with or without water, comes to the fore as a needed item in every factory and industrial plant. Managers of production and safety departments praise it, want it and install it, because it saves time, money and lost man hours, insuring industrial health, cleanliness and overall economy. VI-LAN CLEAN is a perfect all-purpose skin cleaner, activated with a potent bacteriostat which overcomes dermatitis and other skin ailments. It contains ACTAMER, a product of Monsanto Chemical Company, and is approved by the American Medical Association. VI-LAN CLEAN does what soap can not do.

Write for descriptive folder TODAY

DAMERON ENTERPRISES
INCORPORATED
427 So. 20th Street — Louisville 3, Kentucky

(For details, use Key # K-1 on card on page 85)

WISE TO CHOOSE
SAFE TO USE

THOSE IN THE KNOW
. . . PREFER
Install K-LENS-M Lens Cleaning and Anti-Fogging Stations for clean, clear vision . . . for all types of safety eyewear, glass or plastic.
More Efficient—Lower Cost
Send company letterhead for FREE sample and complete information.
K-LENS-M
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The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
Cortland 2, N. Y.

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VISIT BOOTH 58—NATIONAL SAFETY CONGRESS & EXPOSITION

(For details, use Key # K-2 on card on page 85)

Published by Alfred M. Best Company, Inc., Publication Office, Columbia Turnpike, Box 232, Rensselaer, N. Y. Editorial and General Offices, Best Building, 75 Fulton St., New York 38, N. Y. Entered as Second Class Matter at Post Office at Rensselaer, N. Y. Under Act of March 3, 1879. Subscription rates, $4.00 Per Year in the United States; $5.00 in Canada; Foreign, $5.00. Single Copies, 50 cents. Publication Date 1st.

An Evolution

Yes this is a Safety Goggle! ...it's the **NEW** **AO† F5100** (METAL)

Both with "ULTRASCOPIC VISION"

NEWLY DESIGNED AND ENGINEERED "from the ground up" . . . with greater protection than ever . . . greater field of vision than ever . . . more wearer acceptability than ever . . . with many new features — these are the most advanced of safety glasses.

The safety director who recommends these AO safety glasses rests assured that he has selected the very finest — with lenses and frames of the highest quality and ophthalmic standards. Yes, and in addition he obtains true economy because structurally these safety goggles are *engineered, designed and made to last longer!* These new 1956 styles will be in complete supply soon and will replace predecessor models.

Always insist on AO Trademarked Lenses and Frames

American Optical

SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS

BRANCHES IN PRINCIPAL CITIES

(For details, use Key # K-3 on card on page 85)

in Eye Protection!

Yes this too is a Safety Goggle!
...it's the **NEW**
AO† F9500
(PLASTIC)

See them at the AO Booths, Chicago Safety Show.
Or write for illustrated descriptive brochure.

† T.M. Reg. by American Optical Company

Safety's Supermarket

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Sponsored by the National Safety Council, the exposition will be held at the Conrad Hilton Hotel, Chicago, on October 17–21.

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Go Modern — Buy Magic

MAGIC LENS TISSUE (Silicone treated) sheet is over 50% larger than usual, and has twice the tearing strength. Yet MAGIC costs you less. Loaded with sparkle-power, it polishes — and protects lens — as it cleans. Compact, self-mounting MAGIC Dispenser needs no screws, no drilling. Just stick it to the wall.

MAGIC LENS TISSUE $8.40 per carton
(6 refills per carton)
MAGIC LENS DISPENSER $2.50 each

All prices F.O.B. shipping point.

MAGIC HEAVY-DUTY Cleaning Station is for dirty, oily areas or where Anti-Fog protection is necessary — on plastics or any eyewear. Pressure-packed. About 1,400 applications per can. One MAGIC can equals 4 old-fashioned bottles. That is the first saving. No pump. No bottles to refill. Indestructible steel Dispenser locks can in place. Releases sheets 1-by-1, not in bunches, greatly reducing waste. HEAVY-DUTY Paper (not Silicone-treated) is a superb, super-strong, wet-strength tissue. Naturally, no scratching on plastic, and no lint.

MAGIC HEAVY-DUTY DISPENSERS $5.95 each
CLEANING & ANTI-FOGGING FLUID (12—12 oz. cans) $12.50 per carton
HEAVY-DUTY PAPER (18 giant refills 760 sheets each) $11.60 per carton

"We spend lots of money for safety - but nothing pays off like our eye-safety program."

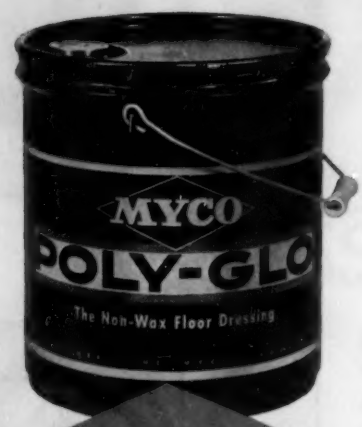
Yes, nothing pays off like an eye-safety program — using MAGIC Cleaning Stations. And in your war against obsolescence you can exchange any other type dispensers for new Magic dispensers — FREE. Wire or write us today or order through your Safety Jobber.

Magic Cleaning Stations
T. M. REG. U. S. PAT. OFF.

The Silicone Paper Company of America, Inc.
General Offices: 75 E. 45th St., New York 17, N. Y.

(For details, use Key # K-4 on card on page 85)

The 1 dressing that gives you 3 major floor maintenance benefits!



MYCO POLY-GLO

The New, Heavy Duty Non-Wax Floor Dressing

1

LABOR-SAVING EASE OF APPLICATION

Poly-Glo applies easily and quickly . . . it dries in minutes to a tough, hard glossy film. Poly-Glo strongly resists heel marking, dirt and water . . . and will *not* yellow or discolor the lightest floors.

2

EXCELLENT SLIP RESISTANCE

The "Slip Test" conducted by Underwriters' Laboratories, Inc., proves Poly-Glo has a slip resistance that rates "excellent" on all surfaces. Reason enough for you to use Poly-Glo on all your floors.

3

SPARKLING BEAUTY WITHOUT BUFFING

Self-polishing Poly-Glo gives you sparkling beauty without hours of machine buffing. To keep floors dust-free and polished, sweep daily with yarn broom treated with MYCO Yarn Broom Dressing. Damp mopping with cold water whisks off clinging dirt, will not remove Poly-Glo's protective film or lustre.

USE POLY-GLO *SAFELY* ON ALL TYPES OF SEALED WOOD, RESILIENT and NON-RESILIENT FLOORS!

ONLY POLY-GLO DOES IT! AFTER ORIGINAL APPLICATION YOU CLEAN AND POLISH FLOORS IN ONE OPERATION!

For floors subjected to heavy traffic, still coated with Poly-Glo, just damp mop with solution of Poly-Glo and water. It removes surface soil, eliminates the need of stripping, protects the floor. Machine buffing after removal of surface soil restores original lustre.

MYCO PRODUCTS SAVE TIME • EFFORT • LABOR

MYCO

MASURY-YOUNG COMPANY

76 Roland Street, Dept. 60, Boston 29, Mass. • In Canada: Toronto, Ontario

BRANCH OFFICES IN PRINCIPAL CITIES

MYCO is a registered trademark of MASURY-YOUNG COMPANY, and identifies the company's complete line of first-quality floor maintenance products manufactured under exacting standards since 1857.

Visit our booth #224-225 at the National Safety Congress, to be held in Chicago, October 17-21.

(For details, use Key # K-5 on card on page 85)

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Safety Maintenance and Production

formerly "SAFETY ENGINEERING"

Volume 110, Number 4 **October 1955**

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Cover picture by courtesy of E. I. Du Pont de Nemours & Co., Inc.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

Bausch & Lomb introduces brilliant *NEW* industrial styling in . . .

Titan

the first combination-type safety frame—metal bridge with acetate eyewires and temples—for men and women

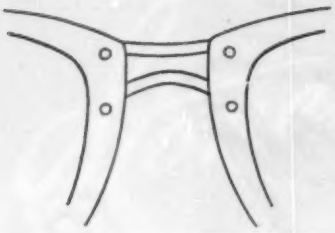
Another step forward by Bausch & Lomb in making safety eyewear more acceptable to workers. Ideal in all applications of spectacle-types —with plano Bal-SAFE lenses, or Bal-SAFE prescription lenses—in eye, bridge and temple sizes to fit anyone in your shop.

There's a B&L industrial eyewear representative in your area, glad to demonstrate the new B&L Titan, or any other feature in the B&L line, the most complete in the industrial vision field. For further details write: Bausch & Lomb Optical Co., 90546 Smith St., Rochester 2, N. Y.

BAUSCH & LOMB

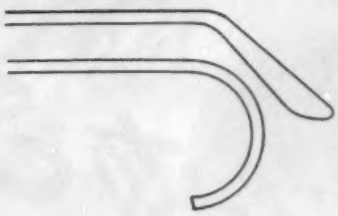
SINCE B&L 1853

(For details, use Key # K-6 on card on page 85)



Bridge trussed and riveted for added strength

Dual Nickel silver bridge is a single piece held rigidly to frame with four sturdy rivets, affording maximum strength, plated for corrosion resistance.

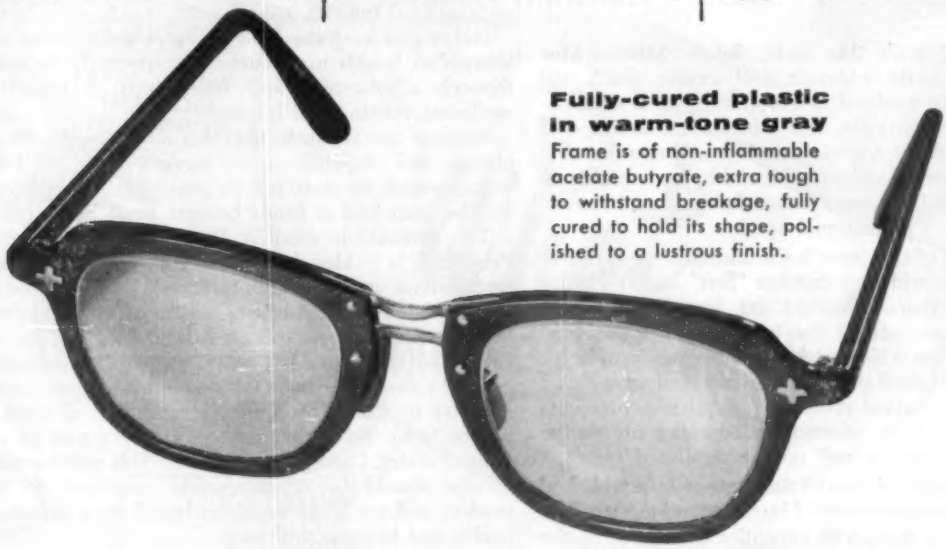


Temples interchangeable for convenience in fitting

Your choice of spatula or cable temples to suit the individual worker.

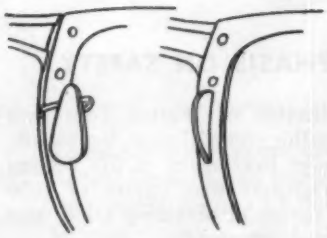
Safety-Cross plaque says "SAFETY" at a glance

You can never confuse Titan with non-safety specs. Safety-cross plaques on front identify it instantly, prevent substitution.



Fully-cured plastic in warm-tone gray

Frame is of non-inflammable acetate butyrate, extra tough to withstand breakage, fully cured to hold its shape, polished to a lustrous finish.

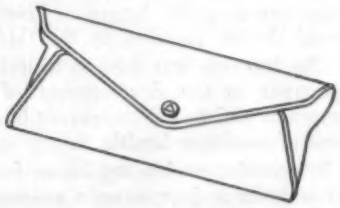


Adjustable pads optional for added comfort

Your choice of adjustable nose pads, or molded rigid plastic pads. The adjustable pad is an integral part of the bridge.

Lenses shaped for wider visual field

Large, modern lens shape is nicer to look *at*, easier to look *through*. It conforms to eye movements.



In tough, washable vinyl steel-reinforced case

New B&L snap-closing Cari-All case provides ample protection for Titan, will accommodate dress glasses while worker is on the job. Each case includes identification card in pocket under flap.

See Titan at the National Safety Congress Chicago, October 17th thru 21st

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• NEW INDUSTRIAL HYGIENE SERVICE

STARTING with this issue, **Safety Maintenance** will offer to its readers a new service which will include a section edited in cooperation with Occupational Health Institute, the educational activity of Industrial Medical Association. We will now be able to refer inquiries based on industrial hygiene problems to our Editorial Advisory Board for unbiased recommendations and professional opinion.

On page 55 of this issue is the announcement of this new affiliation which is another "first" in our history spanning 55 years. Readers are invited to submit inquiries to the editors for transmittal to this new Industrial Hygiene Editorial Advisory Board. In keeping with established ethics in matters dealing with all phases of the medical profession, inquiries, comments and letters seeking information covering preventive and control measures will not be published.

The Occupational Health Institute was established in 1954 by representatives of business and the medical profession as a non-profit educational activity of the Industrial Medical Association. It is the successor organization of the American Foundation of Occupational Health, founded by the IMA in 1954.

The Institute was formed to guide industrial managements in the development of employee health programs and to aid companies in dealing with problems of employee health.

It provides a clearing house for the exchange of information and experience among management and medical staffs . . .

It gives companies a place to turn for help in dealing with health problems peculiar to special industries or localities . . .

It makes surveys of company medical facilities and reports to management their status and efficiency . . .

It awards the OHI Certificate of Health Maintenance to companies whose medical services meet the standards set by the Industrial Medical Association.

The Institute recognizes the pressing need for many projects such as:

Research in many industrial health problems as yet unanswered.

The study of adequate methods of protection against occupational injuries and disease.

Helping to meet the need for more trained men and women in health maintenance programs in industry through scholarships and fellowships in industrial medicine, nursing and hygiene.

Because the Institute provides all services without charge and depends upon financial support from managements to carry out its program, those projects will be launched as funds become available.

The Institute headed by Dr. Frank A. Calderone, President, is guided by a Board of Directors representative of industry and the medical profession, a Board of Industrial Advisors, an Advisory Committee of Industrial Nurses and an Advisory Committee of Industrial Hygienists. It makes available the experience of men and women who have been carrying out effective programs of employee health in all sizes of plants, in all types of industry, in every part of the United States, Canada and Hawaii. This new monthly service should be of invaluable assistance to our readers and we invite inquiries based upon industrial health and hygiene problems.

• GREATER EMPHASIS ON SAFETY

FOLLOWING publication of "Fasten Your Seat Belts" appearing on this editorial page last month, comes the announcement from many of the leading motor vehicle manufacturers that buyers of 1956 models will have the option of obtaining safety seat belts in privately owned automobiles.

In fact, leaders of the motor industry are placing greater emphasis on safety as the result of the nation's urgent need of reducing the appalling toll on our streets and highways. To this end newly designed steering wheels, dashboards, sun-visors, etc., will be shown on many new models in a stepped-up campaign to prevent or at least minimize motor vehicle injuries.

Leading safety authorities have concluded on-the-spot tests proving the efficacy of built-in seat belts to prevent drivers and passengers from being hurled out of their seats. If the belts will do their job, why shouldn't they be standard instead of "optional"?—H.A.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

Most people sometimes forget—and it's a dangerous oversight to forget Safety. "I forgot" is an all too common alibi for an accident.

STONEHOUSE SIGNS

To help workers *remember*, post Stonehouse Safety Slogans and Reminders signs. Just the few words on any of them help to promote safety.

The tendency to forget should not be overlooked—it's serious. Teach your workers to cultivate the practice of safety by reminding them to *remember* its blessings.

Have you our Catalog? 64 pages, in full color. It's free on request.

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Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # K-7 on card on page 85)

and you can improve their record through the simple expedient of establishing a Safe Driver Awards Program. Your company's emblem becomes a warm handshake for the driver through public RECOGNITION of his capabilities and loyalty.

If you have not already worked out an awards program, our free brochure will provide you with all the necessary detail, or we will be glad to send a representative to see you and set up a program.

Our specialized art department will create an awards emblem that will immediately identify your product and symbol. Our advice and design are free.

May we suggest that you fill in and mail the coupon below to get your program off to a quick and efficient start.

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City, State:.....

(Use Key # K-8 on Inquiry Card on page 85)

Chicago, Ill. *Oct. 17–21*

Forty-third National Safety Congress and Exposition (Conrad Hilton and other hotels). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Charleston, S. C. *November 3–4*

Eighteenth Annual South Carolina Accident Prevention Conference (Francis Marion Hotel). J. Donald Watson, Jr., Secretary-Treasurer, P. O. Box 539, Columbia, S. C.

Kansas City, Mo. *November 14–18*

Eighty-third Annual Meeting of the American Public Health Association and related organizations (Municipal Auditorium). Dr. Reginald M. Atwater, executive secretary, American Public Health Association, Inc., 1790 Broadway, New York 19, N. Y.

New Orleans, La. *December 12–13*

Sixth Annual Louisiana Safety Association Conference. (Roosevelt Hotel). J. R. O'Donnell, Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.

Philadelphia, Pa. *January 23–26*

Seventh Annual Plant Maintenance & Engineering Show (Convention Hall). Clapp & Poliak, Inc., managers, 341 Madison Ave., New York 17, N. Y.

San Francisco, Calif. *February 2–3*

Sixth Annual California Statewide Meeting of the Governor's Industrial Safety Conference (Fairmont Hotel). Department of Industrial Relations, 965 Mission St. (Room 400), San Francisco, Calif.

Atlanta, Ga. *March 4–6*

Southern Safety Conference & Exposition (Biltmore Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond 25, Va.

Los Angeles, Calif. *March 19–21*

Third Annual Southern California Safety Congress & Exhibit (Ambassador Hotel). Greater Los Angeles Safety Council, 610 S. Main St., Los Angeles 14, Calif.

Klamath Falls, Ore. *April 5–7*

Forest Products Safety Conference. George Metzger, Secretary-Manager, c/o Willamette Valley Lumber Operators Association, Eugene, Oreg.

New York, N. Y. *April 16–20*

Twenty-sixth Annual Greater New York Safety Convention & Exposition (Hotel Statler). George E. Decker, chairman, Greater New York Safety Council, 60 E. 42nd St., New York 17, N. Y.

Washington, D. C. *May 14–16*

President's Conference on Occupational Safety.

Rochester, N. Y. *May 22–24*

First Genesee Valley Safety Conference and Exhibit (Rochester Chamber of Commerce Building) William H. Keeler, secretary-treasurer, Rochester Safety Council, 55 St. Paul St., Rochester 4, N. Y.

Explosion-Proof Twins!

COMPLETELY Explosion-Proof!

Yes, this is the *first* industrial vacuum cleaner which combines portability, efficiency, and *complete safety*.

The MULTI-CLEAN H-500 EXPLOSION-PROOF Vac has been tested by UL and approved for use in Class I, Group D and Class 2, Group G locations.

This now means that you can use this wet-dry vac amid explosive gases, vapors, dust, and in dozens of other situations where danger of explosion or fire had previously made use of a vac too risky.

It's ideal for cleaning floors, walls, overhead pipe, machinery or stock bins where there is grease, chemicals or other flammable materials. And since it works equally well for wet or dry pickup, it's just the thing for cleaning combustible material from storage tanks.

Mills and elevators, chemical plants, petroleum refineries, gas plants, and distilleries are just a few of the locations where this new vac is especially suited.

For more information on the H-500, its powerful ⅞ hp totally enclosed motor, 100% bronze or aluminum construction, and spark-proof electrical fittings . . . see your MULTI-CLEAN Distributor or mail coupon below.

The MULTI-CLEAN EXPLOSION-PROOF Floor Machine, shown below, is engineered for scrubbing, cleaning, buffing, and polishing in presence of combustible gases, liquids, and dust. The completely-enclosed, explosion-proof motor, heavy duty safety switch and connection box are all approved by Underwriters Laboratories, Inc.

Available in 14″ and 16″ sizes. Both can be equipped with a 3-gallon solution tank and channel feed brush for mechanized scrubbing.

Multi-Clean Explosion-Proof Floor Machine

MULTI-CLEAN Products, Inc., Dept. SMP-105
2277 Ford Parkway, St. Paul 1, Minnesota

Gentlemen: Send me complete information on the:

☐ Explosion-Proof Vacuum Cleaner
☐ Explosion-Proof Floor Machines

Name_____ Title_____

Firm_____

Address_____

City_____ Zone____ State_____

SAFETY ALUMINUM LADDERS

ALUMINUM EXTENSION LADDER EASIER TO HANDLE, STRONGER

This Safety Aluminum Extension Ladder offers aluminum's natural advantages of light weight, strength and durability. Weighs only 1¾ lbs. per foot and is easily carried even in the longer lengths. Positive, self-locking safety locks (see illustration) are easily adjusted at any height. Rungs are ⅞" x 1¼" oval and are double-bolted to rails. They have a heavily serrated top edge to prevent slipping. Side rails are 2⅞" deep on 16' and 32' sizes, 3⅜" deep on 36' and 40' sizes. Feet have super grip rubber treads and self sharpening spikes. Available in 16', 20', 24', 28', 32', 36' and 40' lengths. Single ladders, with same features as extension type, are available in 8', 10', 12', 14', 16', 18' and 20' lengths. Write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P

ALUMINUM STEP LADDER HAS SPECIAL SAFETY FEATURES

Designed and built with extra safety in mind. Steps are deeply grooved to prevent slipping. Safety-type spreads never pinch fingers. Heavy-duty rubber boots on all four legs eliminate slipping, and marring of floor. Bottom step has double bracing (see inset). Pail rest is self-closing for added convenience. Extremely easy to handle, weighing only 2¾ lbs. per foot. 27-inch, 7 lb. Aluminum Step Stool also available. Write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P

Branches in All Principal Cities

(For details, use Key # K-10 on card on page 85)

Check List of Aids to Production

Through Safety—

Chemical Leak Cover 25
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Aerosol Burn Kit 66
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Insecticide Fog Generator 97
Carbon Monoxide Eliminator 98
Filter for Dust Collector 99
Dwarf Dust Collector 100
Methane Indicator 101

Through Fire Protection—

Wheeled Carbon Dioxide Units 90
Hand Carbon Dioxide Units 91
Vaporizing Liquid Extinguishers 92
Wheeled Chemical Foam Units 94
Hand Chemical Foam Units 95
Fire Door Exit Lock 97
In-Plant Fire Truck 97
Fire-Retardant Paint 100
Approved Plastic Panels 101
Adhesive Letters 101

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SAFETY—SERVICE AND STYLE

NEOPRENE COMPOSITION
A standard of quality

14 & 18 Iron—Blk-Brown

The largest selling sole of its kind

NEOPRENE CORK-GRIP
It's light—yet rugged

15-18-21-Irons—Blk and Brown

A soft flexible step with day-long comfort

NEOPRENE CORD
It's new—it's colorful

14 & 17 Iron—Blk-Brown—with and without Labels

A safe-sure step and tough long wear

By Invitation Member

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Represents High Standing in NAME-PRODUCT-POLICY

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With Matching Heels

FOR—PEAK PROTECTION AGAINST HEAT, OILS, SOLVENTS ETC.
FOR—EXTRA MILES OF SAFE SERVICE

MANUFACTURED AND DISTRIBUTED BY **QUABAUG RUBBER COMPANY** NORTH BROOKFIELD, MASSACHUSETTS

(For details, use Key # K-11 on card on page 85)

Noise Control

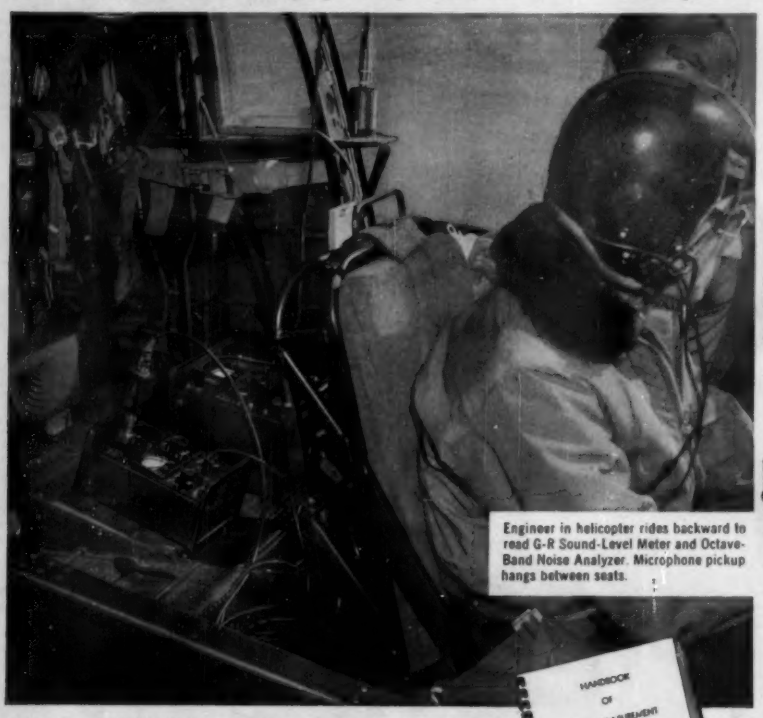
...for Personnel Safety and Maximum Effectiveness

Optimum performance of any aircraft depends on peak efficiency in the operation of power plant, airframe, and *the humans controlling the whole.*

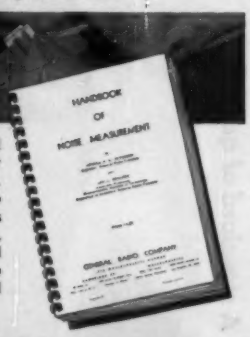
In designing the new Navy HOK-1 helicopter, engineers of The Kaman Aircraft Corporation kept the human consideration much in mind. To insure minimum noise distraction and top personnel efficiency, these engineers made exhaustive sound measurements and analyses. The levels and frequency characteristics of sounds within the cockpit were accurately measured under various flight conditions. Having first made measurements and gauged the problem, the designers were in a position to minimize the troublesome frequency components.

Kaman engineers wanted both accurate and reliable sound-measuring equipment to perform this important work. They chose the G-R Type 1551-A Sound-Level Meter and Type 1550-A Octave-Band Noise Analyzer as the most effective means for measuring the "whirring" broad-frequency sounds of the helicopter. These men knew they could depend on the G-R symbol . . . trademark for dependable electronic-measuring instrumentation throughout the world.

A complete line of G-R Sound-Measuring and Analyzing Equipment is available.



Engineer in helicopter rides backward to read G-R Sound-Level Meter and Octave-Band Noise Analyzer. Microphone pickup hangs between seats.



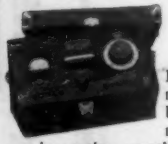
Should you need basic information on the characteristics of sound and the overall problem of noise and its measurement, write for the HANDBOOK OF NOISE MEASUREMENT by Dr. L. L. Beranek of MIT and Dr. A. P. G. Peterson of the General Radio Company. This publication of over one-hundred pages describes measuring equipment and techniques, interpretation of results, and the most fruitful approach toward minimizing detrimental sounds. The HANDBOOK is available from G-R at $1.00 to cover printing and mailing costs only. To avoid unnecessary clerical expense, please enclose check or dollar bill with your order.

Type 1551-A
Sound-Level Meter, $360

Basic sound-measuring tool for reading the sound-pressure level at its microphone in terms of the standard A.S.A. reference level.

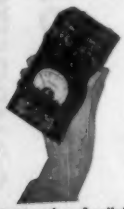
Type 1550-A
Octave-Band Noise Analyzer, $535

For rapid, convenient broad-band analysis of "unpitched" sounds where the noise energy is widely distributed over the audio spectrum and is usually caused by shock excitation, impact or turbulence.



Type 760-B
Sound-Analyzer, $520

For narrow-band measurements of pitched sounds . . . best suited to measuring noise emitted by rotating, reciprocating or other cyclic mechanisms where prevalent frequency components are harmonically related to motor speed or other characteristic.



Type 1555-A
Sound-Survey Meter, $135

Low-cost pocket-size sound-level meter for preliminary investigations prior to detailed study and analysis with above equipment.

Accessories Available for Sound-Level Meter . . . Vibration Pickup . . . Sound-Level Calibrator . . . External A-C Power Supply . . . Dynamic, Condenser and High-Sound-Pressure Microphones.

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Prices are net, FOB Cambridge or West Concord, Mass.

(For details, use Key # K-12 on card on page 85)

SEND THIS PERSONAL SAFETY MESSAGE

TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work. They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires.
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 8½" wide x 8½" deep

...talks the worker's language!

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it...it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:
Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

INSIDE PAGES
(pages 2 and 3)

So Goes the World
Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
Falls are the second greatest cause of injuries in industry and a source of many severe cases. It is these two-level falls that really do the damage.
You can't be too careful when working with or on ladders—scaffolds—ramps—stairs or any elevation. You are just plain lucky if you don't break bones from bad falls of this kind.
Slippery surfaces, loose objects, defective, rough and uneven floors cause about half of the falls. These falls are bad enough but usually not as serious.
Never clutter up stairs or aisles. Help keep them free of tripping hazards and you may save some one from a bad fall. Maybe yourself.
FALLS KILL 80 EVERY DAY

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

CHOCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

THE "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

VIVID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

HOW TO ORDER

YOUR SAFETY NEWS may be ordered with either the Standard Imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below.

Item (1) FIRM NAME. Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

Clip Out & MAIL TODAY!

ALFRED M. BEST COMPANY, Inc. • 75 Fulton Street, New York 38, N. Y.

Gentlemen:

Until further advised, please publish for us each month_____ copies of YOUR SAFETY NEWS at _____¢ each.

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Item (1) — Our Special Imprint should appear as follows:

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200 to 500 copies	5½¢ each	4½¢ each
100 to 199 copies	6½¢ each	5¢ each
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ZORBALL

keeps all slippery surfaces

ZORBALL *absorbs oils, greases, paints, chemicals.*

Sprinkle freely on icy, wet walks, drives, etc.

SKIDPROOF

Avoid accidents, work slowdowns due to slipping on oily, greasy . . . or icy . . . plant steps, floors, ramps, walks, driveways, loading and shipping platforms with all-purpose Wyandotte ZORBALL!

ZORBALL is the safest, most effective floor absorbent you can buy — remains skidproof after absorbing *any* liquid, and it's fireproof, even when saturated with combustible liquids! ZORBALL is harmless to fabric, wool, metal, rubber, asphalt and wood surfaces, grass; harmless to skin.

ZORBALL has the lowest use-cost of any floor absorbent. It has exceptional resistance to breaking down, mudding, dusting, caking, and tracking. And, after drying out, it can be used again. Remember — it costs less to *prevent* accidents with WYANDOTTE ZORBALL!

For a free sample or complete data, mail coupon below, or call your Wyandotte representative now! *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California. Offices in principal cities.*

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J. B. FORD DIVISION

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Wyandotte, Michigan

☐ Send FREE sample and data on ZORBALL
☐ Have representative call

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Firm_____
Street_____
City_____ Zone____ State_____

(For details, use Key # K-13 on card on page 85)

COVER GOGGLES
FOR COMPLETE PROTECTION

WATCHEMOKET eye SAVERS

SOFT VINYL FRAME
For Safe, Comfortable, Form-fit

Model 440 SV—clear frame **460 SV**—green frame
Heavy Impact Goggles with replaceable, optically perfect, methacrylate lenses.
Clear Lens (C) .125" thick
Green Lens: Light (G2) Medium (G4)
Dark (G6) .080" thick

Model 441 SV—clear frame **461 SV**—green frame
Average Impact Goggles with replaceable, optically perfect, acetate lenses.
Clear Lens (AC) .060" thick
Green Lens (AG) .050" thick

Models 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
Acetate Lenses: same as 441

STAC-VENT (SV) . . . a new principle in goggle ventilation, proven to provide clearer fog-free vision, more comfort and greater safety. Other types of ventilation available: Regular Ventilation (RV), Screen Ventilation (CV), or No Ventilation (NV).

Safe, Shatterproof Lens Easily Replaced. Eye Savers lenses will not shatter or splinter with impact . . . will not pit. Lenses are easily replaced by removing the "lock bar" that positively locks the lens in the frame. No special tools needed. Lenses are interchangeable in all Soft Vinyl Frames.

Fits Over Any Prescription Frame — Extra wide 6" lens in the large vinyl frame provides ample space for metal or horn rimmed glasses. Frame forms a bumper that prevents the lens surface from touching when goggle is laid flat on a table or bench.

Safer, More Comfortable to Wear — Eye Savers, soft Vinyl frames form-fit any shape face comfortably. Flanged nose bridge fills the gaps around the nose to assure greater protection. Adjustable, elastic headband holds goggles in position.

SOFT VINYL
Black Frame

WELDING GOGGLE Model 492

Large opaque black vinyl frame form-fits the face. Stac-Vent provides light-tight ventilation. Removable lens holder holds replaceable standard 50 mm round, Federal Specifications, welding filters—shades 3, 4, 5, or 6 available. Glass filters protected inside and outside by acetate cover lenses.

RIGID FRAME

COVER GOGGLE Model 7

Molded curved cover goggles are available in two sizes, medium and large. They fit over most rimless and metal frame glasses. Frames are supplied in a choice of crystal, green or black. Replaceable methacrylate lenses available in clear (C), light green (G2), medium green (G4) and dark green (G6).

ONE PIECE
Acetate Goggles

CHEEPEE Model 99

Low cost one-piece acetate goggle . . . optically perfect, close fitting and lightweight.

D-LUX Model 100

One piece, acetate goggle fits over most prescription glasses. Optically perfect with full all around vision . . . no distortion. Both models available in clear and medium green.

EYE SHIELDS

METHASPEC Model 55

Low cost Methaspec Eye Shields are the ideal visitors' protection. The lens and visor are molded in one piece, formed of guaranteed optically perfect .080" thick methacrylate in clear (C) with black painted visor, light green (G-2) and medium green (G-4). Retrax temples and lens angle device permit easy adjustment to fit comfortably.

Quality Eye Protective Equipment *Made by the Leaders in Plastics*

WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St. PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26*

(For details, use Key # K-15 on card on page 85)

SAFETY SPECTACLES

FOR LIGHT WEIGHT AND COMFORT

WATCHEMOKET eye SAVERS

"Featherlight" TUC-AWAY

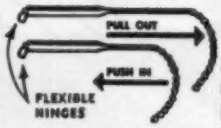
For 90% Protection Worn All the Time

Model 415 — plastic retrax temples (illustrated)
Model 412 — metal retrax temples
Model 410 — plastic club temples

Shatterproof Methacrylate Lenses

Replaceable — Interchangeable — Eye Savers "Tuc-Away" lenses are plano, optically perfect, .080" thick for safe, impact protection; will not shatter or pit. They provide full, clear vision with side shield protection or cup type side and bottom protection. Available in clear, green and gold shades.

Economical . . . initial cost is low, maintenance is eliminated, replacement lens cost is low. It pays to have 90% protection 100% of the time instead of 100% protection only 50% of the time.



Adjustable Retrax Temples — Plastic or metal Retrax Temples telescope in and out to provide proper head fit. Universal Nose Bridge assures comfort and eliminates need for extra stock sizes. One size fits all.

SPECIFY LENS TYPE AND COLOR BY CODE NUMBER

Type Lens	*Clear*	*Light Green*	*Medium Green*	*Dark Green*	*Gold*
Regular Side Shield	CSS	G2SS	G4SS	.....	YSS
Full 1" Side Shield	CSSF	G2SSF	G4SSF	G6SSF	YSSF
Quarter-Cup Shield	CQC	G2QC	G4QC	.....	YQC
Semi-Cup Shield	CSC	G2SC	G4SC	G6SC	YSC
Full-Cup Shield	CFC	G2FC	G4FC	G6FC	YFC

VISOR-TUC

The Visor-Tuc with over eyes "VISOR" provides almost 100% protection with comfort. Visor fits snugly against the forehead. All lenses are interchangeable in Tuc-Away.

Model 425—plastic retrax temples
Model 422—metal retrax temples (illustrated)
Model 420—plastic club temples

SPLIT-JOINT

FRAME ONLY Model 80

Furnished for prescription use with standard 47 mm P-3 shape lenses. Lenses not furnished.

FRAME WITH PLANO Model 80 MS

Safety spectacles with optically perfect, curved, methacrylate lenses, .080" thick, clear (MSC), light green (MSG2), medium green (MSG4).

SIDE SHIELDS

SNAP-ON SHIELDS Model 115

Extra side protection with prescription safety spectacles can be obtained by snapping on these deep cup acetate side shields. Will fit on all sizes of safety frames. Available in clear (AC) or medium green (AG). These eye shields are easy to attach and remove, thanks to nickel silver clip-holders which hold them in place.

CLIP-ONS

TUC-OVER
MODEL 175 Medium
MODEL 176 Large

Featherlight Tuc-Overs are all plastic with integral visor protection. Replaceable, optically perfect lenses are shatterproof, curved methacrylate .080" thick, available in clear (C) light green (G-2) and medium green (G-4). Frames are available in a choice of translucent white or green in medium or large.

EXECUTIVE

SAFETY SPECTACLE
Model 595 Metal Retrax
Model 590 Club Temple

Handsome, lightweight frame curved to fit forehead and give maximum protection without side shields. Optically perfect, curved methacrylate lenses easily snap-in, snap-out.

SC1—Clear lenses for safety.
SC2—Light green lenses.
SG4—Medium green lenses.
SY1—Gold lenses.
Furnished with protective case.

Quality Eye Protective Equipment *Made by the Leaders in Plastics*

WATCHEMOKET OPTICAL CO., INC.

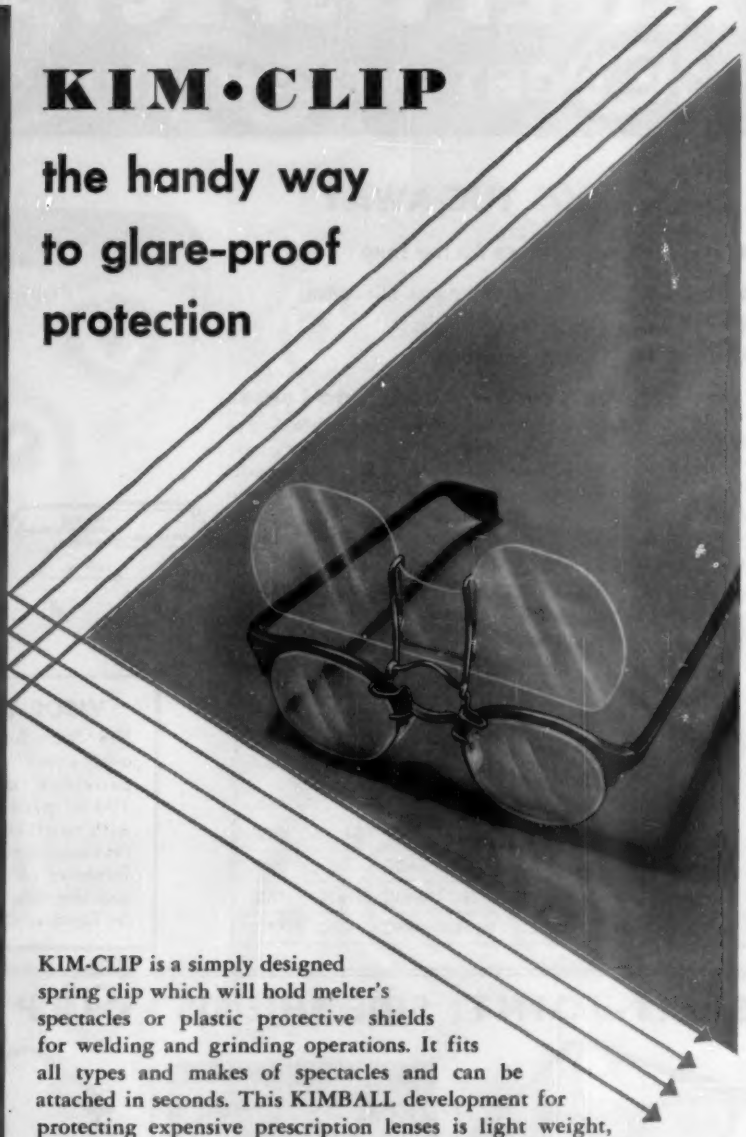
238 West Exchange St. PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 24*

(For details, use Key # K-14 on card on page 85)

Note that KIM-CLIP is adjustable to three definite positions. Just flip the glare-proof protective shields to the desired position. No need for two pair of safety spectacles when you have a KIM-CLIP.

KIM•CLIP

the handy way to glare-proof protection



KIM-CLIP is a simply designed spring clip which will hold melter's spectacles or plastic protective shields for welding and grinding operations. It fits all types and makes of spectacles and can be attached in seconds. This KIMBALL development for protecting expensive prescription lenses is light weight, convenient, practical and inexpensive. KIM-CLIP affords complete glare-proof comfort with safety. The plastic protective shields are available either clear or tinted.

OTHER KIMBALL SAFETY PRODUCTS . . .

EYE PROTECTION: Spectacle Goggles, Welding Goggles, Composition Goggles, Sideshields.

HAND PROTECTION: GLOVES: Welder's, Asbestos, Steel Stitched. MITTENS: Welder's, Asbestos, Steel Stitched.

BODY PROTECTION: CLOTHING: Wool, Flameproofed Cotton. LEGGINS and SPATS: Leather, Asbestos, Flameproofed Cotton. APRONS: Leather, Asbestos, Flameproofed Cotton.

Kimball SAFETY PRODUCTS COMPANY

9310 Wade Park Avenue • Cleveland 6, Ohio

(For details, use Key # K-16 on card on page 85)

The High Cost of Horseplay

A Few Laughs—A Few Lives

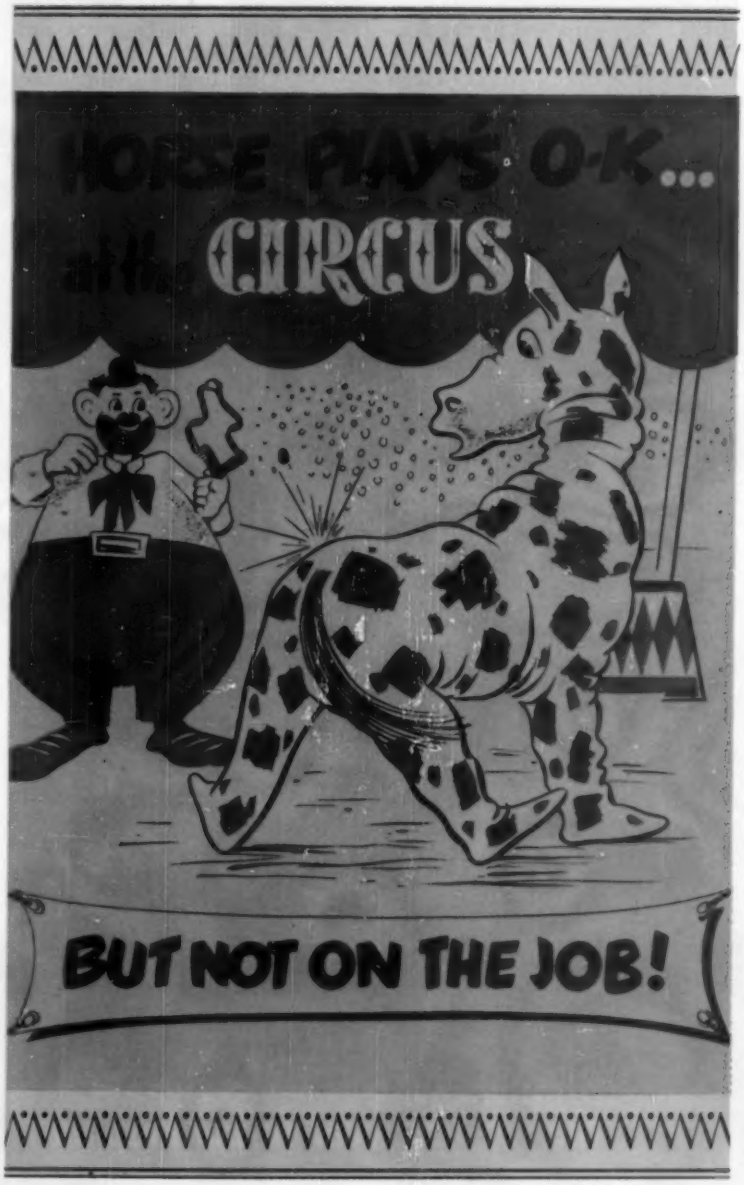
Fun is fun, but it's no laughing matter in an industrial plant. Last year, American industry unwillingly anted up some 15 million dollars and American labor paid with more than 15 thousand deaths and injuries because, in plants throughout the nation, there was an inevitable "comedian" in the crowd, according to estimates of the National Safety Council.

In recent years, enlightened industry and responsible labor have joined forces and spent considerable time and money to be sure that every available protection and safety device guards the American workman on the job. It has been difficult, however, to control the human factor—the fun-loving factory hand—the Glue Works Gleason or the Bottling Plant Berle, whose addlepated antics have brought disaster on himself and his coworkers and disrupted production schedules in the process.

Assembly line comics have done everything from tossing a live cat at a fellow worker to administering a fatal hot-foot, with a resultant loss of more than one million man hours to American industry in 1954.

"Pushers" and "throwers" are the chief miscreants among horseplay practitioners. "Pushers" are funny fellows who sneak up behind a coworker and give him a playful shove or prod. Usually, the victim is one who has previously demonstrated his or her extreme distaste for this kind of body contact, and who reacts violently to it.

The most dangerous kind of "pusher" is the character who thinks a compressed air-hose is a jester's toy. This industrial equipment has proved to be a deadly weapon or



an instrument of torture in the hands of a practical joker. In one incident, a man "goosed" with an airline hose lost seven inches of his lower bowel and narrowly escaped with his life after agonizing hospitalization.

"I just wanted to have some fun," the jokester lamely told his shocked buddies. The truth is, many of them had themselves participated in similar "hazing" of other employees.

"Throwers" are assembly line comics who wad up a piece of paper, shavings, cotton batting or waste material and toss it at a fellow worker. The other fellow or girl is either surprised by the sudden missile or makes a college-try lunge for it. Both reactions can have disastrous consequences near moving machinery, in addition to being wastefully time-consuming.

Jungle Antics

"Throwers" often hurl the strangest objects. Recently, in one industrial plant, a man reported to the dispensary with an ugly series of severe lacerations on his chest and stomach.

"Looks like you tangled with a tiger," said the nurse as she ministered to the injured man. She was closer to the truth than she dreamed. The victim, who had finished work for the day and was standing stark naked in front of his locker after showering, was suddenly struck by a furry ball of spitting, snarling, clawing fury which landed on his chest. It seems a worker with a perverted sense of humor or a strong streak of sadism in his makeup had spotted a stray cat in the locker room. He picked it up and hurled it blindly over the top of his locker. Had the startled feline landed on the face of the victim he might have lost the sight of one or both of his eyes.

There have been numerous cases where fatalities have resulted from playful hurling of flammable fluids. In one recent instance, two men were killed by an apparent explosion in a gas-driven machine. Investigation brought out that a worker had tossed the gasoline in a sudden clownish gesture. Two of his fellow workers "got the joke" but lost their lives. The man was charged with manslaughter and now has plenty of time to ponder over the tragic consequences of his misplaced humor.

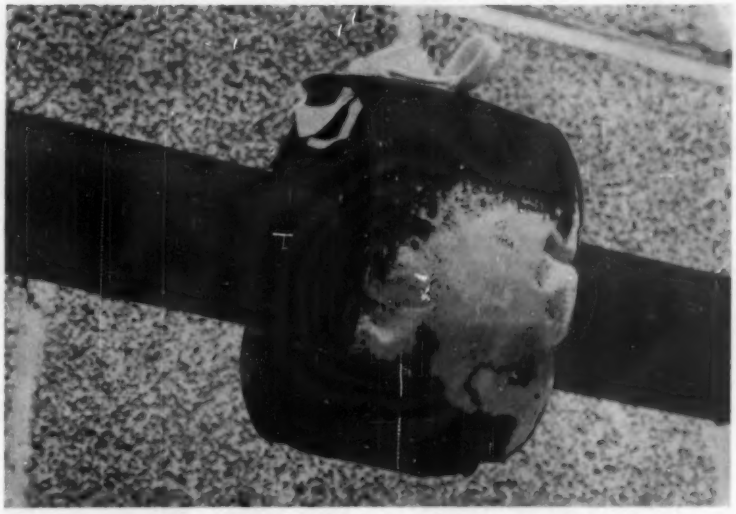
Squirting of water is a common cause of accidents in industrial plants. Most frequent victims are employees who are temporarily blinded, who forget safety regulations in frantic efforts to avoid getting wet, or who slip on wet floors. There have even been cases where employees have dropped bags of water on workers stationed at lower levels. In one recent near-accident a rigger, standing on a crane runway was struck on the head by a bag of water dropped from steel work above. The victim's glasses were broken and he just managed to save himself from falling off the crane runway.

Another "freak" accident involving a flying missile occurred in a factory locker room. A worker flung open the door of his locker, to which some jokester had previously tied an empty bottle. The cord snapped and the bottle was flung nine lockers down the line. A man dressing there heard the crash of the bottle and jumped to avoid it. Instead, he landed barefoot on the broken glass and was so severely gashed that a tourniquet had to be applied before he could safely be carried to the first-aid station, where the attention of a surgeon was required to sew up his wounds.

If it need be repeated that "liquor and gasoline do not mix" here is a recent grisly example. An odd-jobs boy in a garage was sent out by

(Continued on page 50)

Safety Cover Signals Leaks



Chemically-sensitive cover turns from red to white when valve which it protects springs leak. Cover is strong enough to check sudden spurt of liquid and turn it toward floor. Ease of discovering leak promotes safety.

by **ARTHUR B. TOFT**

As with so many "potential risk" occupations, personnel in chemical manufacturing and its related industries too frequently become indifferent to possible danger. Ever-present hazards inherent in the operation of chemical-carrying pipelines have long been acknowledged by safety officers and maintenance inspectors; but until recently, worker apathy and the high cost of shielding personnel and equipment from the danger of sudden leaks has inhibited the use of adequate safeguards.

Now, the marketing of a lightweight, insurance-company approved, indicating valve and flange cover * has largely eliminated the excuse for unguarded pipes.

The likeliest place for a leak to occur is around a valve or in a connecting flange, from which a harmful jet of chemical can, and frequently does, cause accidents and work stoppage that send production costs up and production itself, down.

For many years, it has been accepted practice to reduce the risk of unexpected faults in pipelines by enclosing the "weak" points of valve and flange with a covering of lead. But lead is heavy, costly and expensive to install, therefore, too many pipeline trouble-makers are left completely uncovered.

There has also been the problem of the various valve and flange covers themselves, for in shielding a leak they also conceal a leak. A fault in the line may go unnoticed until heavy corrosion causes a maintenance problem that means downtime, costly repairs and loss of production.

What was needed was a cover that was light-weight, easy to install, but which could give maximum protection without the penalties of corrosion. Such a device has now been developed, tested, approved, and already successfully marketed. This new valve and flange cover is made from especially suitable lightweight material, shaped to fit standard pipeline equipment, and can be attached by anyone in seconds. It is held securely in place by strong, easily accessible tapes.

The shape of the cover itself, which leaves the valve handle conveniently exposed, and the most suitable material to use were questions that were relatively simple to answer. Both solutions ensured safety for personnel and an economical method of guarding against unheralded pipeline defects. But the problem of spotting the leak before it could cause extensive damage, was a different matter.

The Warning

After years of experimentation a reliable and fast method of revealing the leak has been perfected. With the new cover, a dramatic warning plays up the fault so effectively that it is literally a safety and maintenance report on itself.

The importance of this new device lies in the fact that the material from which it is made incorporates an agent that changes color when struck by leaking chemicals. With the cover in place, a stream of leaking chemical from a defective valve or flange, will strike the specially treated material and right away begin to activate the color-change "warning."

This change in color is not merely a slight lightening or darkening of the material, but a vivid, bright contrast that is immediately apparent to anyone in the vicinity. It can be spotted at a glance. Once the men have been alerted to report this obvious signal, it has the effect of placing all personnel on the safety and maintenance teams.

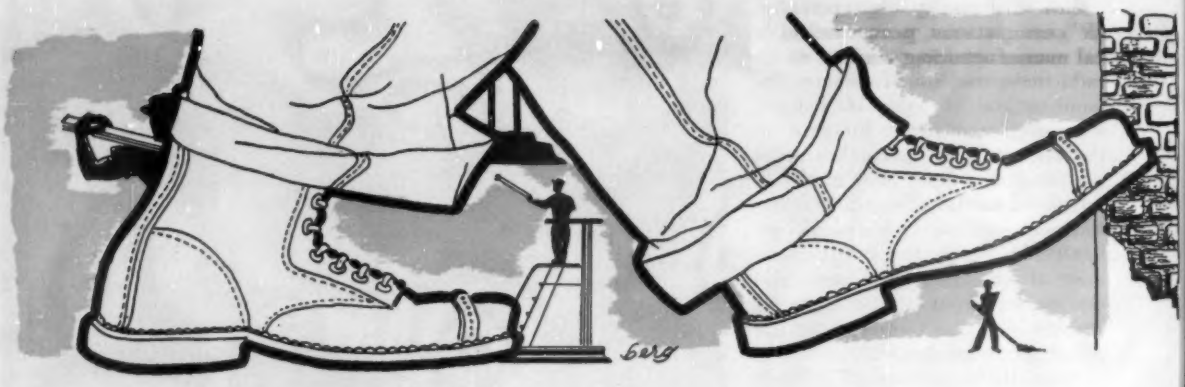
A very small leak is sufficient to begin the color-changing process in the new cover so that it "speaks up" quickly and efficiently, giving the maintenance crew a chance to get on the job while the leak is still a "weep." And the fact that the cover remains unaffected by fumes, means that it doesn't cry "wolf." The cover also prevents a violent leak from jetting out onto the workers and equipment.

The new cover can be stored easily, packs flat and is sufficiently economical so that a plant can be equipped for a fraction of the cost of old protection methods.

Pictures by courtesy of Neirad Industries, Inc.

* Further details concerning this device may be obtained on inquiry to the Editor.

Take a Big Step Toward



The 8 Important Jobs of Plant Maintenance

1. Inspect plant and equipment frequently enough to detect wear and tear, misadjustment and impending breakdowns before there are spoiled products, serious damage, or delays.
2. Perform such servicing, adjustments, repairs, and replacements as inspection shows to be necessary.
3. Make emergency repairs.
4. Keep systematic records on the plant, equipment, and on inspections, servicing, adjustments, repairs and replacements which have been completed.
5. Keep "follow-up" records to assure suitable future periodic re-inspections.
6. Suggest and assist in developing improvements in machinery and equipment to decrease the chances of breakdown and the necessity for frequent adjustments or repairs.
7. Suggest and assist in developing better methods of performing maintenance work to decrease costs.
8. Perform other service jobs, such as assisting in the installation of new equipment.

IN THE LONG RUN, effective plant maintenance does not cost you money—it saves you money. These savings result from lowered factory burden charges; for example, it is clearly worthwhile to put $2.50 into maintenance work now, when it will help you avoid a $250 replacement bill later on.

A well-run maintenance program will also pay off in terms of better worker morale, less non-productive time, and in the end, higher plant productivity. That pay-off is possible because maintenance will help you to anticipate and prevent interruptions in operations and costly loss of output from accidents, machinery and equipment which is in bad condition or broken down, and from poor housekeeping. The net result is that your unit costs will go down.

In large plants, maintenance is usually conducted by a separate department organized on a full-time basis to carry out this work. In small plants, however, the same functions can be consolidated with inspection, production, or engineering duties. Nevertheless, it is important for even the smallest plant operator to make sure that all those individual functions have been recognized and accounted for, and that continuous and economical maintenance operations have been assured.

Plant maintenance functions can be divided into two general groups: preventive functions, which are concerned with anticipating trouble; and corrective functions which are concerned with repairing trouble which has already occurred.

Setting limits on the responsibility and work in maintenance is a policy matter. It is therefore a decision for the chief operating executive to make. Some companies turn over to their maintenance people most non-production engineering jobs. Other plants, however, hire outside specialists to do this sort of work. In most cases, the choice rests on the important factors of relative cost and quality of work. Whichever way the decision is made, everybody concerned should be informed as to: exactly what the maintenance jobs are; who is to do them; and when they are to be done.

Very probably, you will not have a completely separate maintenance staff. Most small plants don't. But it is important to make sure that you have all of the following duties clearly assigned to someone, and that they are regularly and carefully carried out.

Maintenance operations should include: inspection, engineering, production, clerical and housekeeping duties.

Inspection means making routine checks throughout the plant to keep track of the condition and care of buildings, machines, equipment, and other facilities. It also involves indicating needed repairs,

Better Maintenance in the Small Plant

by **EDWARD L. ANTHONY**
Business Specialist
Managerial Assistance Division
Small Business Administration

adjustments, and replacements, and recommending any improvements which should be made.

Maintenance inspections should be regularly scheduled and methodically conducted. Specific instructions should also be issued indicating: what is to be inspected; the nature of the inspection; and what, if any, servicing, adjustments, or minor repairs and replacements are to be made at the time of inspection.

Inspection reports should show precisely what repairs are necessary and what the cost of such repairs is estimated to be. You will be able to use these reports in connection with follow-ups on the next regular inspection to make sure that the necessary work has been done and that results are good.

Engineering means designing changes and improvements in plant, machinery or equipment and doing other developmental work.

For example, in one small plant a recurring difficulty developed in keeping a certain machine properly secured to its mountings. The maintenance people determined that the problem lay partly in the vibration from the machine's power source and partly in the construction of the mountings. To correct the situation they designed a stronger internal bracing arrangement and adopted a heavier combination of bolts and brackets for mounting.

Similarly, many a maintenance man has rigged up special lighting fixtures to meet the problems of unusual angles or sizes which make standard equipment unsatisfactory, or to fill a need for multiple outlets which stock items can't match.

Production means putting into effect ideas developed in the engineering phase of maintenance, carrying out work assigned as the result of inspection, and performing routine adjustments and servicing such as lubricating. It is the branch of maintenance work which actually gets things done and keeps the plant in order. For that reason, it is usually the best understood and most commonly thought of aspect of maintenance in small plant operations. It is also the area in which the largest savings in overhead costs can be made.

Breakdowns of machinery and equipment will sometimes occur despite everything you do to prevent them. Each problem of this kind falls in the production area of maintenance, but each must be dealt with according to the best judgment of the responsible executive. In deciding what is to be done in such cases, you should consider the origin and cause of the breakdown, the nature of the necessary repairs, and the possibility of taking particular steps to prevent recurrence. All special or emergency repairs should be recorded in the same way as are routine repairs and replacements.

You can supervise and control the routine work of servicing and of making adjustments, repairs, and replacements in much the same way as you regulate your production operations. A simple set of forms, like those used in production planning and scheduling, can be adapted to show at all times the jobs which are completed, those being worked on, and those still pending.

You will find it useful also to have storage facilities which carry in stock those parts which experience shows must be frequently replaced and which do not require an unreasonably large investment in inventory, or those which cannot be obtained from a local distributor on very short notice. Among these items may be: Electric lamps, electrical fittings, pipe fittings, washers, bearings, bolts, nuts, screws, and the like.

Repair and replacement work must be done in accordance with local building codes. It must also be in keeping with state laws, insurance rules, and regulations for safeguarding workers, machinery, equipment, and buildings.

(Continued on the next page)

Clerical generally means keeping records. To be sure, there may be numerous kinds of records, such as follow-ups, timekeeping, budgeting, costing, and reports of progress. Individually, however, they do not have to be complicated. Most of the clerical work has to be "tailored" to your particular plant situation, just as you must decide in the light of experience and needs what records and reports you want and when you want them.

There are, in addition, certain maintenance records which almost any small plant operator should keep permanently. They cover all important features of your plant and all important details of your maintenance operations. Here are 10 which you should have readily available and constantly up to date:

1. Property maps
2. Complete sets of building drawings
3. Complete sets of power line drawings
4. Maps of underground piping
5. Factory piping maps, including heat, steam, water (hot and cold, service and drinking) and fire equipment (sprinkler systems, hose connections, hydrants, and so forth)
6. Layout of shop transportation facilities
7. Perpetual inventories of machinery and equipment
8. Drawings and specifications of machinery and equipment with lists of parts for ordering replacements
9. Records of inspections, adjustments, repairs, replacements, and their costs
10. Machine and tool layouts

Housekeeping means taking care of the details of upkeep, cleaning, and keeping in good condition the tools, equipment, and facilities in the plant. Here is a checklist which you can apply to your own situation:

Floors

1. Is damaged flooring repaired immediately?
2. Are trash baskets for papers, candy wrappers and the like, placed at convenient locations?
3. Is the danger of throwing scrap and other material on floors and platforms impressed constantly upon workers?
4. Are floors vacuum-cleaned or swept daily; or if necessary, more than once a day?
5. Would a non-slip floor coating significantly reduce slipping hazards?
6. Do you need an exhaust system to remove dust, sawdust, or wood shavings?
7. Are oil and grease spots taken care of immediately?
8. When greasy, oily parts are removed from machines are they placed on paper or sawdust, rather than directly on the floor?
9. Is the floor kept wet and slippery in spots by oil drips, or water leaks? If so, have you tried to eliminate the cause by having repairs made, by installing drip pans, and splash guards, or by improving your present pans and guards?

Work Areas

10. Where possible, are chips, shavings, and other refuse collected in containers as they are produced rather than allowed to fall on the floor?
11. Is there sufficient space around machines, benches, and other equipment for safe, uncrowded work?
12. Are work areas clearly marked off with painted lines?
13. Are machines, benches, tables, and other items of equipment arranged in an orderly manner?
14. Do workers have racks or other holders in which to keep tools and parts?
15. Have you a tool check-out system to assure prompt return and better care of tools?
16. Do you schedule production carefully so that there is no need for unusually large amounts of work-in-process or finished items in work areas at any one time?
17. Have you instructed workers in drawing the correct amounts of needed materials and supplies to avoid cluttering work areas?
18. Are excess materials returned promptly to the storeroom?
19. Do you provide suitable tote boxes, trucks, or other transportation equipment for moving work-in-process?
20. Is work-in-process moved up promptly to the next operation?
21. Are separate containers provided to avoid mixing up salvable scrap and waste?
22. Are the containers emptied regularly?
23. Is scrap salvaged—either reprocessed, or sold—regularly?

Machines

24. Are machines lubricated at the correct points and with the correct amounts and kinds of lubricants?
25. Are chips, shavings, or other scrap wiped off machines frequently during the day and dirt and grease removed regularly?
26. Should your machines and other pieces of equipment be painted to help keep them clean, prolong their life, and aid in lighting?

Storage Areas and Stacking

27. Do you provide adequate, clearly marked storage areas for: incoming materials, work-in-process, finished goods, supplies, tools, and spare parts?
28. In stacking material, is consideration given to the strength of the floor, possibility of toppling, and interference with work areas?
29. Are racks used for safe storage of pipe or other long stock?
30. Are small articles kept in suitable containers?
31. In storerooms, are areas marked off for items which must be kept on the floor?
32. Are lower bins saved for heavier items?
33. Are smaller items arranged neatly on shelves or in bins?

Aisles

34. Are aisles kept sufficiently wide to permit efficient flow of traffic?
35. Are aisles clearly marked with painted lines?
36. Are aisles kept free of materials, work-in-process, and finished items?
37. Is care taken not to have ends of piled materials jutting out into the aisles?

Stairways and Exits

38. Are stairways well-lighted?
39. Are elevators kept clean and well-lighted?
40. Are exits clearly designated? Are door latches and hinges kept in working order?

41. Are stairways and exits kept free of obstructions?
42. Are stairways kept clean and in good repair?
43. Are there secure hand-rails?

Fire Hazards and Fire-fighting Equipment

44. Are rubbish, oil-soaked cloths and other flammable materials placed in metal cans which are emptied daily (or do they accumulate in corners, lockers, and under benches and stairways, causing fire hazards)?
45. Do you store flammable or explosive materials in safe, easily-identified containers?
46. Are fire extinguishers, hoses, fire pails, and other fire-fighting equipment kept clear of obstructions?
47. Is the equipment checked and tested regularly and kept in working condition at all times?
48. Is piled material kept well below sprinkler heads?

Plant Lighting

49. Have you a regular schedule for washing windows and skylights?
50. Does your plant have adequate, modern lighting?
51. Are lamps, fixtures, and reflectors cleaned periodically, and burned-out lamps replaced promptly?
52. Are walls and ceilings painted a color which reflects natural and artificial light, but does not cause glare?
53. Are walls and ceilings cleaned regularly?
54. Are they repainted when cleaning no longer restores their reflecting value?

Employee Facilities

55. Are toilet and washroom facilities adequate?
56. Are convenient, cold water drinking fountains available for all employees?
57. Are the facilities kept clean, sanitary, and well-lighted?
58. Are workers urged to help keep them clean and neat?
59. Do workers have a suitable, clean place, away from machines, in which to eat?
60. Are lockers provided for workers' clothing and belongings?

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C-38

Can You Use: A Comprehensive

by **HENRY G. DESJARDINS**

PERSONAL respiratory protection from atmospheric contamination is afforded either by exhausting the impure air a person inhales in the atmosphere around him, or by supplying him with respirable air from a source independent of his working environment. It is generally agreed that in exposure to dusts, mists, fumes, vapor or gases, protective procedures should primarily prevent contamination of air in the breathing zone. However, idealistic as one may wish to be in the application of these procedures, there will always be situations where for one reason or another they will be inapplicable, impractical or not adequately effective. In such situations, respirators should be regarded either as a primary means or as an adjunct or supplement to other prevention procedures.

Respirators, by definition, are any device for rendering inhaled air respirable. The terms "respirators" or "respiratory protective devices" refer to a large and varied group of protectors worn on the face over the head of the worker and designed to decrease or eliminate the amount of contaminants (dust fumes, mists, gases or vapors) in the air he actually takes into his lungs. However, the use and connotation of the word "respirators" have become more or less specialized and to a considerable extent variable. For uniformity in naming the various devices that appear on the market and to provide a basis for thorough understanding of their operating principles and uses, I shall classify them as: mechanical filter respirators; cartridge respirators; gas masks; airline respirators; demand masks; and self-generating oxygen breathing apparatus.

Using Respirators

It must be understood that respirators are not a substitute for general dust or gas control, but are a helpful adjunct. They are used extensively on jobs such as abrasive blasting, paint chipping, handling used storage battery plates, cadmium oxide manufacture, welding operations, preparing of paints and glazes, manufacture and use of pigments and dies, and the like. Their most important use is under conditions where protection is required intermittently, as in cleaning out operations, sweeping, after blasting, removing cores from large foundry castings, shoveling, screening and handling of materials, and operation and maintenance of processing equipment.

Respirators should not be considered part of the worker's wearing apparel. They are safety devices and should be supplied by the employer. The employer's responsibility does not end with the purchase of respirators. He must see that they are distributed to all employees who need them. The workers must be instructed when and how to use the respirators—a difficult task which is accomplished only by incessant education. Above all, the employer should provide means for systematic cleaning and sanitizing of personal respiratory protective equipment to promote good hygiene and encourage use of the equipment.

Respirators, as well as other safety equipment, are cleaned and sterilized in this picture.

Classifying Respirators

Mechanical Filter Type—The mechanical filter type of respirator removes by mechanical or physical filtration (with the aid of electrostatic precipitation in some cases) the dusts, fumes, or mists of hygienic significance from the air drawn by the individual's normal inhalation from the surrounding contaminated atmosphere. The usual design of a filter respirator is a half mask facepiece covering the nose and mouth, directly connected to a filtering element such as a disc, pad, bag or cylinder. It may also be a full mask facepiece connected for breathing to a filtering element on the chest, back or even on the head in the form of a cap. The filtering elements are usually constructed from specially selected processed paper, cellulose fiber, mineral wool, cloth or felt materials.

The primary principle of dust removal by mechanical filters appears to be simple physical trapping by fibers in the filter. Air, laden with dust, is passed through mats of fine fibers, criss-crossed to form mesh-like entanglements with exceedingly small tortuous paths in which the harmful matter is trapped by entanglement, impingement and adhesion, by simple screening, or most likely, a combination of these. Electrostatic influences are undoubtedly present in varying degree for the various filtering media.

Guide To

Studies of the comparative filtering efficiencies of various filter fabrics have shown that both the filtering efficiency and the resistance to air flow increase with continued passage of dirt-laden air through the filter. This is undoubtedly caused by the build-up of dirt particles, reducing and plugging the paths through the filters. Obviously, the respirator which utilizes simple filtration provides its poorest protection and its lowest resistance to inhalation (greatest breathing comfort) when it is first used. Also, of course, its life period is determined by the time required for plugging to increase the resistance to breathing to a point where it is laborious and uncomfortable.

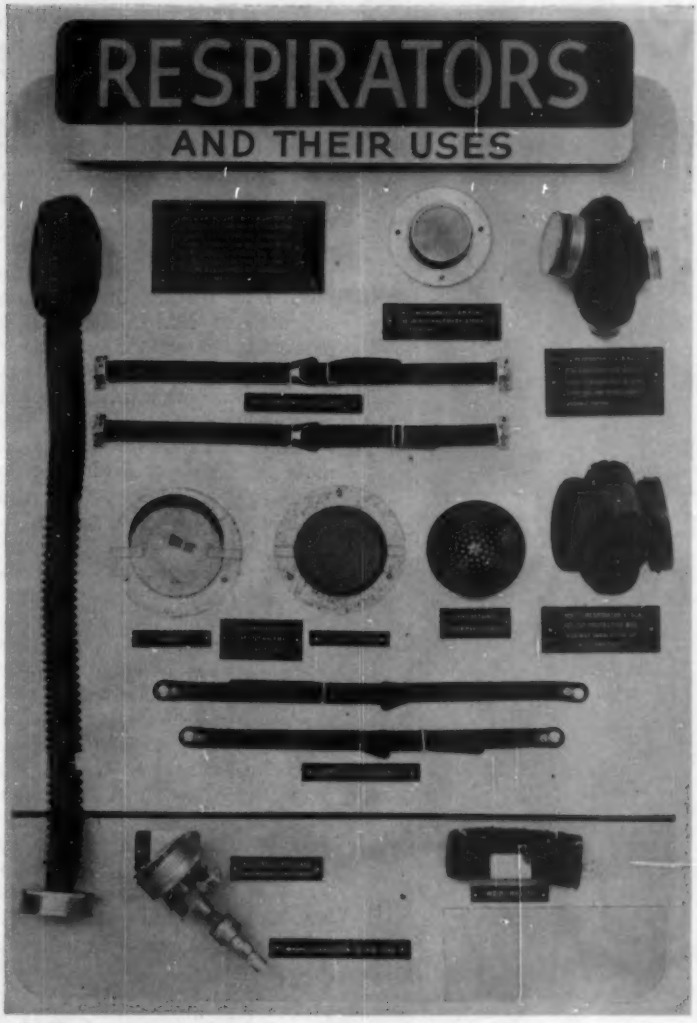
Kinds of Mechanical Filter Respirators

Mechanical filter respirators are sub-classified according to the conventional classification of atmospheric particulate matter, namely, dusts, fumes, and mists. The objective of this subdivision is to provide more suitable filters for the particular kind of matter to be dealt with.

Because of the similarity of design and operation principles, among these 3 classes of respirators, I will present briefly their purpose and summarize their essential features, uses and limitations.

Mechanical filter dust respirators are for mechanically generated dusts resulting primarily from the mechanical disintegration of a solid, such as dust produced in the various processes of mining, construction, and manufacturing, and the various industrial operations, such as drilling, blasting, crushing, grinding, handling, and processing of rock strata and minerals; abrasive grinding; the handling, screening, and use of sand or other pulverized or dusty silicious materials; stone, granite and wood cutting and all similar operations and processes.

Mechanical filter fume respirators are for protection from fumes of various metals (usually the chem-



ABOVE—Demonstration board shows respirators broken down into component parts.

BELOW—Self-generating type of breathing apparatus.

Fume respirator is used by welder with other safety equipment in this picture.

Cartridge-type mist respirator in photo above guards user against paint spray.

The well-known dust respirator is used here to guard worker against metal dust.

ical compounds, as oxides or carbonates), such as lead, manganese, copper, chromium, iron, cadmium, zinc, magnesium, aluminum, antimony, and arsenic. These are produced in chemical and metallurgical processes by sublimation or the condensation of the vapor of these substances or from chemical reaction of the vapor and gases. Fumes and smokes may also be formed by thermal decomposition of chemical compounds and the partial or complete combustion of organic metallo compounds and metal hydrides that produce a solid as a product of combustion, such as diethyl selenide (producing selenium dioxide) and lead tetraethyl (producing lead oxide). The many organic compounds of silicon, as tetra methyl silicate, tetraethyl silicate, and the hydrides as silicane, may be used in industry under conditions where they burn and produce a very fine fume of silica.

Owing to their small size when formed, the particles in fumes or smokes are the most difficult class of particulate matter to arrest and require what may be termed, very dense filter fabrics. A compensating factor in some of the fumes is that after formation, they begin to agglomerate and form clusters, which then act as larger particles and become easier to arrest. Zinc oxide fumes in particular behave in this manner.

Mechanical filter mist respirators protect against mists produced by spray-coating with fluid materials, vitreous enamels and silicious glazes, chromic acid mist as produced by chromium plating, and other mists whose liquid component does not liberate harmful gases or vapors in significant quantities. In general, the mists are of a particle size range that equal or exceed the size of dusts and their removal by respirator filters is not more difficult than for dusts. This is particularly true with materials that have a high proportion of soluble or insoluble solid to liquid.

On the other hand, a volatile solvent holding a solid in dilute solution may evaporate from the solid particles as it floats in the air and ultimately reduce them to a size approaching that of the residual solid component. Mists of extremely small particle size can be formed in this way and they are as difficult to filter as fumes or smokes. Many also present a vapor hazard.

Combination mechanical filter respirators are for the removal of two or more of the classes of matter, as dust and mist, dust and fumes, fumes and mist, etc., either singly or simultaneously. They are intended primarily for situations where more than one class of particulate matter is encountered.

Uses and Limitations

If properly maintained and worn, mechanical filter respirators of a quality that will meet the approval requirements and tests of the U. S. Bureau of Mines will give adequate respiratory protection from the contaminating dusts, fumes or mists for which they are designed. However, equipment approvals granted under these test schedules are limited to particulates not significantly more toxic than lead. Respirators of this type are the most convenient and widely used individual protectors from dusts that contain silica. Some examples of this use of filter respirators are: house-cleaning and maintenance work in factories and plants, including blowing dust from machinery; drilling; mucking and transporting rock in mines, tunnels and quarries; handling, packaging, and conveying dusty materials; cutting and polishing stone (especially in small works) and working with stone in place; shaking out castings, grinding castings, sand blast helpers (special supplied air respirators, commonly known as abrasive masks, are to be worn inside blast room during blasting); in agricultural pursuits, when following dust-producing farm implements, threshing soil-contaminated grain; erosion projects, grading and working dry soil; blowing insulation into homes; grinding, mixing and applying silicious glazes; flow sanding, removing plaster, ash handling, cleaning rugs; and grinding and polishing false teeth.

Mechanical filter respirators do not protect from gases and vapors, and they should not be used in situations where an air supplied device is necessary.

(Continued on page 34)

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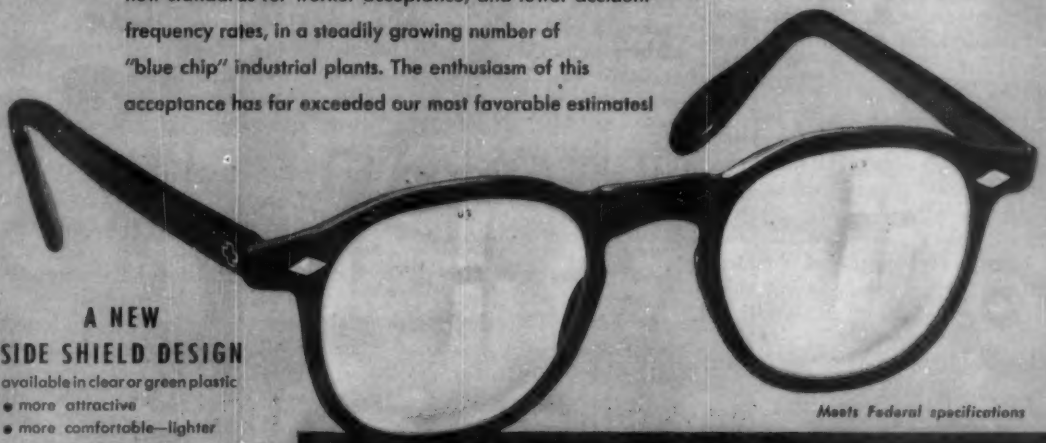

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(For details, use Key # K-18 on card on page 85)

Respirators

(Continued from page 32)

Chemical cartridge respirators usually consist of a small cartridge-like purifier attached directly to and carried by the facepiece of a half-mask design. However, full mask facepieces with canister attached directly, or merely small canisters with mouthpieces attached and wire clips to close the nose are used rather extensively. Essentially, they are low capacity gas masks designed for giving protection against atmospheres which workmen may breathe without protection but which will either produce discomfort or a chronic type of infection or poison after repeated exposures of several hours daily. Their field of use lies in situations where adequate general ventilation is provided but where there is a need for individual protection against localized contaminants.

A major advantage of the cartridge type respirators as compared with a mask having a full facepiece, breathing tube and canister is better vision, convenience and comfort.

A very common use of chemical cartridge respirators is against volatile solvents given off in operations such as spray coating, dry cleaning, using rubber cements, and using other similar materials that contain volatile organic chemicals. They are also used for protection against low concentrations of certain acid gases—for example, in smelting of sulphide ores and in many chemical processes where small leaks that cause discomfort and possibly harm after prolonged exposures are practically unavoidable.

These chemical respirators do not suffice for general emergency work, although they are an aid in quickly escaping from a contaminated atmosphere. Chemical cartridge respirators are standard equipment for workmen in some industries where leaks of gases such as sulphur dioxide, chlorine or ammonia are common, everyday occurrences. They are used for a wide variety of discomforting operations, such as the peeling of onions in canning factories and for protection against nauseating odors. As mentioned above, chemical cartridge respirators are not emergency devices and cannot be substituted for the canister gas mask.

The gas mask is another respiratory device which has a wide application in gas concentrations in air not exceeding 2 percent by volume, with the exception of ammonia which is 3 percent.

Since this type of canister mask removes only toxic gases, vapors or smoke from the air, it is necessary that sufficient oxygen be present at all times to support life. A second requirement is that the mask be limited to use in atmospheres containing concentrations of gas of not more than 2 percent in air, 3 percent ammonia, or a 2 percent total where more than one class of gases is present.

Toxic gases encountered in industry are classified as organic vapors or acid gases. Ammonia and carbon monoxide are also widely encountered. For the protection from acid gases, organic vapors, and combinations of these two classes there are canisters for specific gases, i.e., chlorine, hydrocyanic and alkaline gases. Where solid and liquids such as dusts, fumes, etc., are encountered, additional filters are placed in the canister.

In order to identify the industrial series of canisters, the canisters are painted a distinctive color:

1. Organic Vapors—Black
2. Acid Gases—White
3. Acid Gases plus organic vapors —Yellow
4. Acid Gases, organic vapors and ammonia—Brown
5. Ammonia—Green

Any of these having additional filters for smoke and dusts are marked with a white or black stripe at the top of the canister. Canisters designed for a specific gas are painted with the identifying color for that gas, with a contrasting color stripe at the bottom of the canister; the one exception being the ammonia canister which has no stripe at the bottom. There are no canisters of the strictly industrial series which afford protection from carbon monoxide gas.

Usually it is more economical to use the industrial type mask where protection is required from only one type of gas such as on process work, around refrigerating plants, chlorinating plants, etc.; but for all-round protection, as required in fire fighting or emergency repairs, where almost anything can be encountered and where it would not be practical to change the canister, there has been developed a mask known as the "All-Service" type.

The All-Service masks protect from all smokes, gases, and fumes including ammonia and carbon monoxide, where concentrations do not exceed the limits given above for canister masks, and where there is sufficient oxygen present to support life.

The latest models of these masks feature a very efficient mechanical filter capable of removing fine particulate matter and chemical dusts. These canisters have several layers of chemicals so that successive types or classes of gases, fumes, and smokes are removed as the air progresses through the canister, emerging in a breathable state.

Since these canisters furnish protection from carbon monoxide gas, they are equipped with a timer which indicates when to change the canister in relation only to carbon monoxide. Some mechanical means is necessary because carbon monoxide cannot be detected by the senses. The timer is set at zero when a new canister is placed on the mask, and the canister is dated in the space provided on the label at that time. The

(Continued on page 37)

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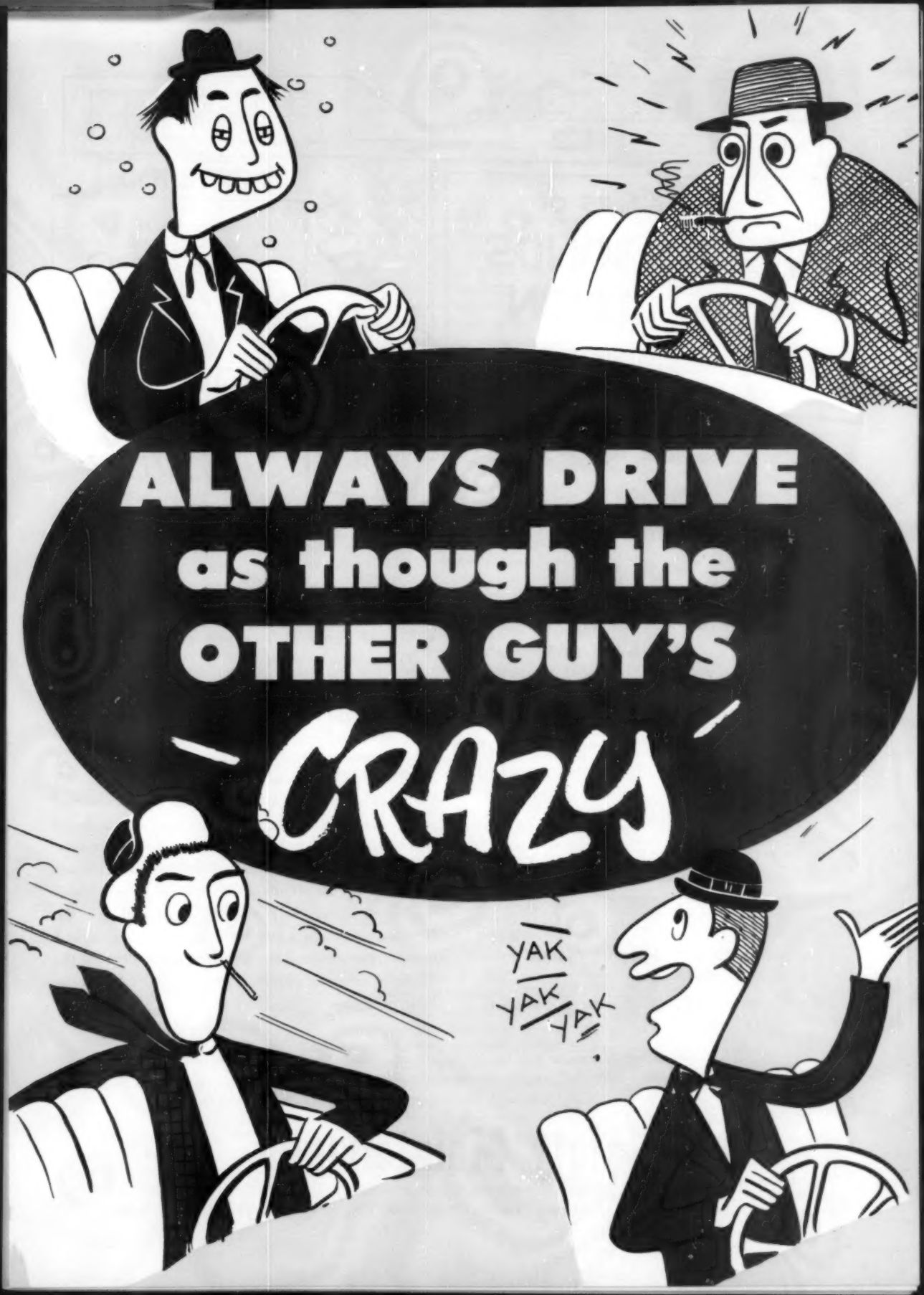
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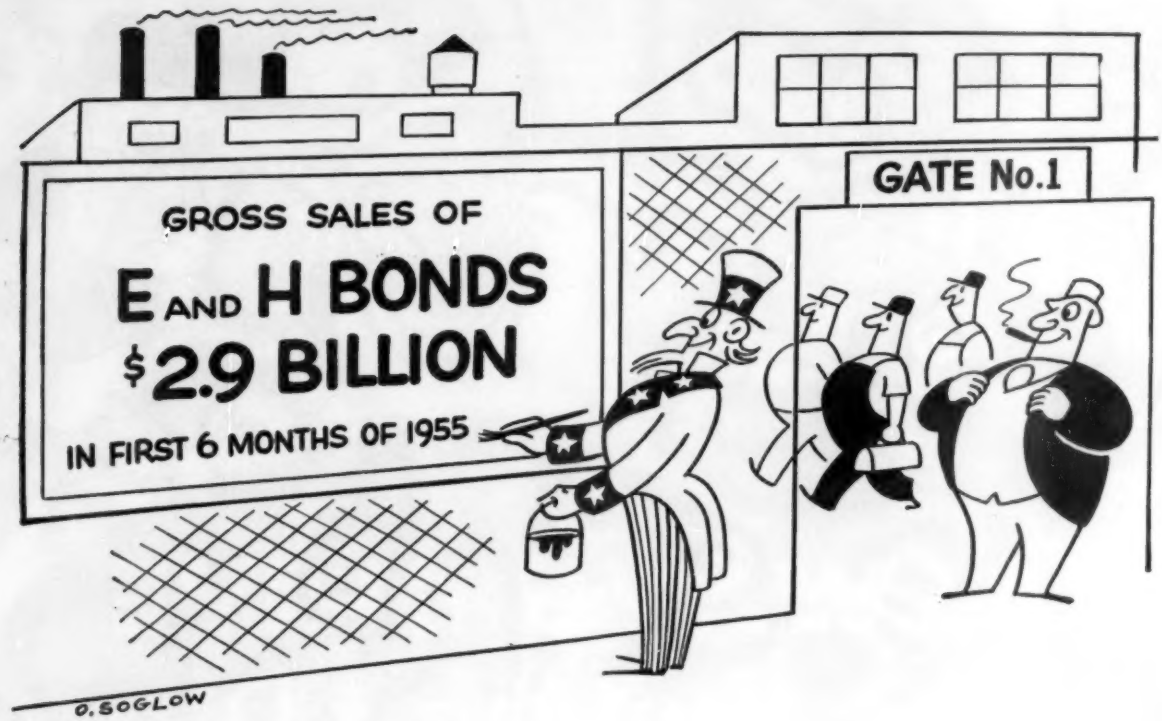

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Safety Maintenance

Respirators

(Continued from page 34)

canister should be changed after the timer has made one complete revolution of the timer dial, which is approximately 2 hours, if detectable gases come through the canister, or one year after the canister has been placed in service as shown by the date, whichever is first.

Canisters should be stored on the shelf with all seals intact in a cool, dry place; and care should be exercised in rotating the stock so that no canisters remain on the shelf for periods of longer than 4 years. After a new canister has been placed on a mask, it is usually recommended that the bottom seal be removed so that the canister is ready for immediate use in an emergency.

The Bureau of Mines is the official testing agency for gas masks (and other respiratory protective devices) and it has set up a schedule whereby gas masks submitted for approval and found to meet the minimum requirements of the Bureau are awarded an approval number. The use of Bureau of Mines approved canister masks is recommended because, to the guarantee of the manufacturer, is added that of the United States Government through its official testing agency.

Airline respirators are supplied with compressed air from an external source so that the worker is independent of the working atmosphere. They are similar to a hose mask in giving protection by conveying respirable air to the wearer, but differ in one important feature. Hose masks allow the wearer to obtain respirable air at liberty by his own effort through a hose of comparatively large diameter, whereas airline respirators maintain the air supply at elevated pressures and convey it through hose lines that are usually comparatively small in diameter. The flow is adjusted to meet the requirements of the person at any instant of inspiration and continues throughout the respiratory circuit. The attachment to the wearer may be a tight-fitting facepiece, a loosely fitting facepiece, or a helmet or hood covering over the head and down to the neck or shoulders.

The development of airline respirators has, in the past, been largely an expedient solution to problems of respiratory protection since it provides workmen with means for breathing some of the compressed air they ordinarily used as a source of power in sand blasting, pneumatic drilling, and spray painting—or air from a source of compressed air available in the plant for other applications or processes. Accordingly, this has led to the development of more or less universal types of respirators adaptable to the characteristics of the air supply demanded by industrial processes rather than the respirators. While this type of protection has been a valuable aid in the control of occupational diseases, its use has frequently been accompanied by contamination of the air with objectionable, and, in some instances, harmful substances.

Later air-line respirators have been designed for attachment to air supplies created for respiratory purposes only by blowers or pumps (usually of the rotary water seal type) in which the air does not come in contact with any organic lubricant whose odor, vapor, mist, or products of decomposition are harmful or objectionable. Also, the air is supplied at low pressures, usually 8 to 20 pounds per square inch gauge pressure. The blower may or may not be supplied by the manufacturer of the respirator. If he does not supply this part, he should specify the quantity and pressure requirements of his respirator and, if possible, should designate suitable models and kinds of blowers.

Airline respirators are designed primarily to protect workers from inhaling harmful or objectionable atmospheres that are not immediately dangerous to life, but which may cause immediate illness, a chronic infection, or an occupational disease that may result in incapacitation or death after repeated daily exposure. The ordinary type of device, with half-mask facepiece and small diameter hose through which a person cannot draw enough air by his own inspiratory effort to meet respiratory requirements, is dangerous to use for protection in atmospheres from which the wearer could not escape

Airline respirator is useful where hazardous atmosphere's effect is cumulative.

The demand type mask supplies oxygen or air as required by wearer's breathing.

Gas mask protects man when contaminated air contains sufficient oxygen to support life.

without respiratory protection. The most serious danger is the possibility of failure of the air supply, which would immediately jeopardize the life of the wearer.

If properly constructed, maintained, and operated, air-line respirators will give adequate protection from the inhalation of any atmospheric contaminant. The uses of this device are wide and include any situation where there is a supply of air and the hose line does not present an encumbrance or hazard. They are comfortable to wear for extended periods. Cost of maintenance is low, and they are easy to maintain.

In order to obtain a good quality respirator, and to be sure it will meet the requirements of procurement, inspection is not only desirable but almost necessary. Although the Bureau of Mines approval indicates that it is suitable for the risk upon which the respirator was approved, it does not indicate that the particular purchase is satisfactory. At least one branch of the armed forces requires an inspection for resistance to sterilization, resistance to corrosion, freedom of material from skin irritants, and requires the manufacturer to wear the respirator in a chamber containing toxic or noxious atmospheres to determine whether it is gas-tight, to test for quality of rubber, air tests for metal parts, and to test for filter quality.

The demand mask is worn in fire fighting and industrial emergencies when high gas concentrations or oxygen deficiencies in confined places endanger lives.

The demand mask combines a supply of oxygen or air with a demand regulator and a full-vision facepiece to provide the wearer with a minimum of 30 minutes service under hard physical exertion. The demand regulator responds precisely to varying lung demands, metering the flow of oxygen or air as each inhalation requires. The unit weighs about 32 pounds, is well balanced and comfortable to wear.

The oxygen or air cylinder is supported by a light metal frame which distributes part of the weight to the hips, and the leather harness is well padded at shoulder and waist. The chest strap supports the demand regulator and pressure gauge, which is visible to the wearer at all times. The flexible, corrugated rubber breathing tube connects the demand regulator with the facepiece which features large-area lenses for maximum unobstructed vision. The lenses are prevented from fogging by a direct flow of oxygen or air across their inner surfaces.

Only a few seconds are required for donning the mask. With the harness fastened, the wearer simply opens the cylinder valve, adjusts the facepiece and breathes normally. The demand regulator delivers automatically the proper flow of oxygen or air. In the unlikely event of failure of the automatic demand mechanism, a by-pass valve can be opened to permit a control flow from the cylinder around the demand regulator; excessive flow or pressure is prevented by an orifice of restricted size. For speech between mask wearer and others a speaking diaphragm is available as a unit of the facepiece.

The self-generating oxygen breathing apparatus provides complete respiratory protection in toxic or oxygen-deficient atmospheres for a minimum of 45 minutes, and is approved by the U. S. Bureau of Mines for such use. This apparatus represents an unusual departure in the design of self-contained breathing equipment. In place of the conventional cylinder of compressed oxygen, the apparatus has a chemical canister from which oxygen is generated gradually.

The entire apparatus weighs 13 and a half pounds. A considerable saving in weight is made possible by the absence of an oxygen cylinder and the usual high pressure fittings found on self-contained equipment.

The component parts of the apparatus consist of:

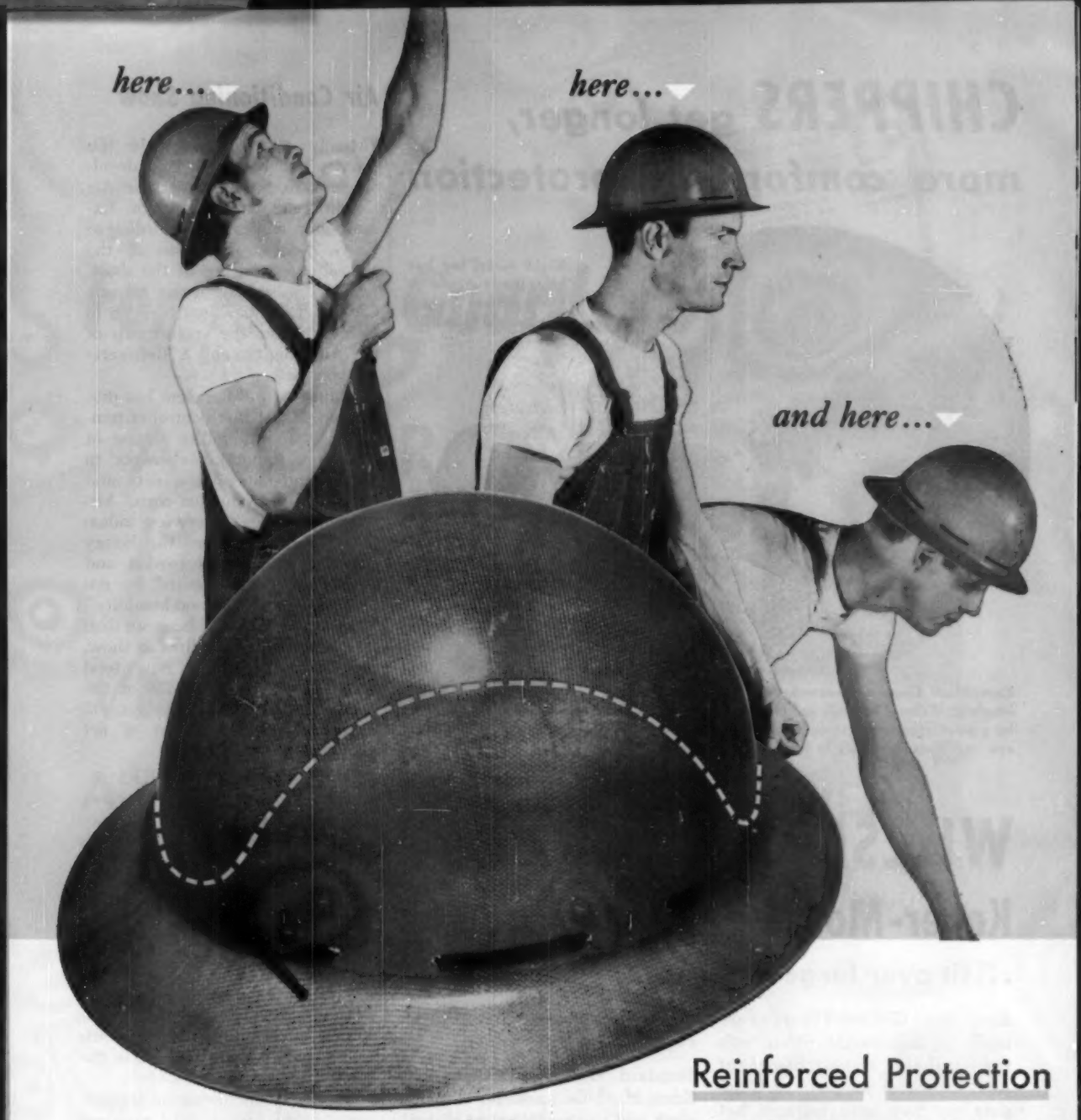
(a) A facepiece assembly, including a facepiece with speaking diaphragm, a valve assembly containing check valves and a pressure relief valve, and two breathing tubes.
(b) A breathing bag, which acts as a reservoir for the oxygen generated from the canister.
(c) The canister, which generates oxygen and removes carbon dioxide from the breathing system.
(d) The plunger assembly, consisting of a plunger which punctures the seal in the neck of the canister, and a plunger casting, through which the exhaled breath is transmitted to the canister, and through which the evolved oxygen is conducted to the breathing bag.
(e) An insulated breast plate and canister frame with attached bail and handwheel for holding canister. The breathing bag is attached to breast plate.
(f) A mechanical timer which rings to indicate the end of the approved 45-minute service life of the canister, or any shorter period selected.
(g) A web harness for wearing the apparatus. This consists of two shoulder straps and a waist strap, all adjustable, and fastened by means of D-rings and snaps. A large D-ring to which a lifeline can be attached is fastened to the harness straps at the point where they intersect across the back.

Any one who may use this type of breathing apparatus must follow the manufacturer's directions and be well trained in the procedure to be followed. Instructions are furnished with each apparatus.

Workmen properly "adjusted" by an educational program will readily accept devices for personal respiratory protection when encountering atmospheres that are markedly discomforting or intolerable to breathe, or for situations which they have seen cause immediate harm or which they definitely understand may do so. There are a few "gaseaters" left but they are rapidly disappearing from accidents, by being too much of a liability to industry, or by being converted to safe practices.

As might be expected, there is more difficulty in securing the proper use of personal respiratory protection for situations in which the harmful atmosphere is tolerable or at least only mildly discomforting. This is especially true where exposure is to a substance such as lead fume, that possesses no sense-perceptive properties other than possible smokiness if conditions are extremely bad. Also, there are no distinct self-observable immediate or accumulative effects on health until serious damage has been done.

(Continued on page 74)



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Air Conditioning Show

Virtually every industry in the country will be affected by developments to be shown at the Air Conditioning & Refrigeration Exposition in November, according to F. G. Coggin, chairman of the exposition committee of the show, which will be held at the Atlantic City, N. J. Auditorium, Nov. 28 to Dec. 1, under the sponsorship of the Air Conditioning & Refrigeration Institute.

"Industrial development has progressed so fast that control of temperature and humidity is one of the most important elements in both maintenance of quality and reduction of production costs," Mr. Coggin declared. "Very few industrial plants can afford the luxury today of spoilage, corrosion and production delays caused by improper temperatures and humidity."

The exposition will be more than one-third larger than the last show. Exhibiting companies now total 232, with an expected 250 at the time of the opening. Displays will cover 88,000 square feet of net exhibit space.

Safety Institute

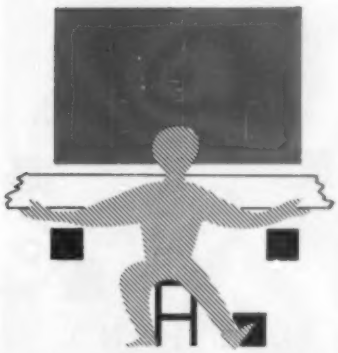
Safety representatives of small industries will have a chance to study new approaches in industrial safety practices at Penn State's eighth annual Industrial Safety Institute, November 15–17, 1955. Anyone interested in accident prevention, including safety inspectors, personnel directors, and insurance safety inspectors, may enroll in the three-day course.

Speakers and discussion leaders, experienced in industrial accident prevention, will be on hand to serve as resource men and emphasize the practical side of safety. Representatives from various industries, industrial organizations, government agencies, and safety councils throughout the State, helped to plan the course, which will be devoted to all phases of accident prevention.

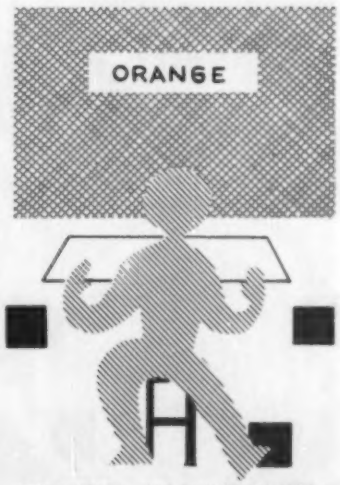
For additional information, kindly write to Professor Amos E. Neyhart, Institute of Public Safety, The Pennsylvania State University, University Park, Pennsylvania.

For Press Guards...

A COLOR CODE



FOOT PEDAL OR HAND CONTINUOUS



FOOT CONTROL SINGLE STROKE

by **HENRY B. DUFFUS**

Administrator, Accident Prevention
Westinghouse Electric Corp.
Pittsburgh, Pennsylvania

ADOPTING a simple color code to distinguish the proper press controls for a specific die installation has considerably reduced the problem of press safety at our standard control division. Because of its success I feel that the idea is worth passing along. Keep in mind, please, that I am not advocating the painting of presses to look like Christmas trees, nor do I imply that this is a panacea for all press problems. Far from it.

Short Run Problem

In our search for safer operation of punch presses, however, there are still a few troublesome spots that face us when we consider operator safety. One of these is the group of smaller presses that are assigned to short run jobs. I am thinking of presses up to 60 or even 90 tons and with more than a 3-eighths inch stroke where you may change the set-up 3 or 4 times a day, from strip feeding to second operation forming; to first operation blanking or bumping; the kind of a job that requires a variety of press feeds.

To give the proper background, let me talk about our standard control division. A high percent of the work there is sheet metal, bus ducts, switch and control boxes, etc. Supplementing the larger draw presses, multislide presses, and other presses that carry the load of the long run operations, are a group of some 50 or more presses and some 2000 dies that are assigned to short run work. Generally girls operate the presses with a set-up man responsible for setting up new jobs and keeping the job running smoothly. All of the presses are equipped with two hand and foot controls either electro-pneumatic or straight pneumatic controls. About 70 percent of the dies are equipped with die enclosures, the rest are open dies.

Possibility of Injury Serious

With two or three press changes a day you can readily see the possibility of a set-up being made and controls adjusted so that the operator could have a hand free to enter the danger zone with the

press in operation. It is of the utmost importance therefore that extra effort be expended to be sure that the proper control adjustments are made for each set-up. To expedite this the plant has come up with a simple color scheme that informs the set-up man of the proper control method for each die installation; that lets the operator know the controls to use with each new set-up, thus holding her equally responsible for improper use of controls; and that makes conspicuous to anyone in the immediate area the fact that the operator is or is not operating safely.

4 Control Colors Used

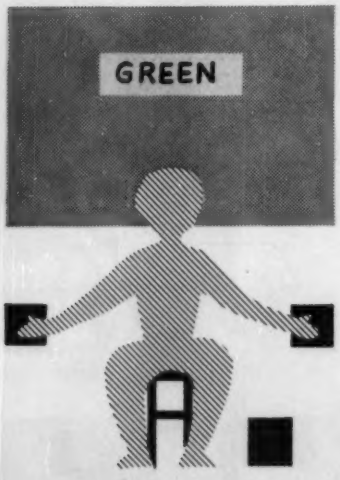
To accomplish this, a set of 4 colors were adopted and the front of each die shoe was painted its associated control color for its safe operation. For example, when a die requires two-hand control for its safe operation then the die shoe is painted green; when a set-up man installs such a colored die in a press he adjusts the press controls for two-hand, single stroke operation. Similarly a die to be used for strip feed and requiring one hand to feed the strip would have the die shoe painted yellow.

Again the set-up man makes the die installation, locks out or cuts out the right hand control and adjusts for single stroke. A job that is die-enclosed so that the operator's hand cannot enter the danger zone is painted orange. This permits single stroke foot operation with both hands free to handle stock. The shoes of dies that require both hands to be free and the press to run continuously are painted red.

In setting up this system, a committee consisting of the Safety Supervisor, Methods Engineer, and the department foreman determined the method of operation for each die. They periodically survey the operations to be sure that the system is being maintained. In addition a designated representative is set up to take care of all new dies.

So that each person will be properly informed of the system, a punch press set-up Card is made available to each set-up man. The text of the card is shown below:

ONE HAND
SINGLE STROKE



TWO HAND
SINGLE STROKE

PUNCH PRESS SET-UP

Control Mechanism Instructions

There are four general control methods available on most of our presses. These are:

Control Method	Die Color Code
1. Two Hand—Single Stroke	Green
2. One Hand—Single Stroke	Yellow
3. Foot Pedal—Single Stroke	Orange
4. Foot Pedal or Hand—Continuous	Red

The method of operation is to be determined for each die by a Committee consisting of the Safety Director, the Methods Engineer, and the Department Foreman or their designated representatives. Their determination will be noted on the Operation Card and the die color coded to indicate the control method to be used. Control methods shall not be changed due to addition of guards, die changes, etc., unless reviewed and approved by this committee.

The Operation Card file will be maintained by the group leader.

It will be the die-setter's responsibility to set-up controls as indicated on this card and the color code on the die.

When first Inspection Card, Form 21166, is made out the inspector will check the control set-up; and if it is done according to approved method, will note on back of card "Control Approved," date, and initial.

If for any reason a special set-up may require other than approved control arrangements, the department foreman must inspect the set-up, make provisions to give the operators any special instructions that may apply and note on back of Form 21166 "Special Control Approved," date, and sign.

The back of the card contains instructions on how to set the controls, mechanical electrical or pneumatic.

As I wrote in the beginning, it's a very simple system that makes it easy to enforce the proper use of press controls. Whether it will work in a particular situation the particular management can be the best judge. It has worked for us. It costs little to try it out.

Pictures by courtesy of Westinghouse Electric Corp.

Fork-Truck Batteries Do Everything

The storage batteries that run the industrial trucks in the E. W. Bliss Company plant at Canton, Ohio perform many other tasks besides keeping the trucks on the move.

In the unhappy event of a power failure, special flood lights are placed in brackets on the trucks and plugged into the truck battery. The lights used are 200 watt, sealed-beam, locomotive headlights adapted for use on 36 volt current. Six lights are available at all times at the truck charging station and two are placed in each of the 4 production buildings. Strong, steady light can be made available anywhere in the plant or grounds that an industrial truck can reach. These lights have been used 3 times in 3 years under emergency conditions.

Industrial truck batteries can also furnish power to the plant telephone system in an emergency by means of a special connection. The regular stand-by batteries will power the telephone system for 3 hours, then a fork-lift truck is driven to the telephone room, plugged into the system to permit communications for several additional hours.

Occasionally the inter-building diesel locomotive requires more time to start than can be supplied by the regular, diesel-starting batteries in the locomotive. A fork-lift truck is parked alongside the locomotive, the truck battery is plugged into the diesel starting system. The battery furnishes the extra ampere-hours needed in cold weather.

Because of the great size and weight of the presses, mills and special machinery built by Bliss, a battery-powered transfer car runs on standard gage track connecting all 4 buildings. This 40-ton car is powered with a 72-cell battery which is charged about twice a week for 4 hours at each charge from a special charger placed near the track. The battery is inspected and cleaned monthly. Water is added weekly to replace electrolyte lost through normal evaporation.

With such reliance placed on industrial batteries, they receive excellent care. The motor-generator sets and control panels for battery charging occupy part of the powerhouse. Charging leads are brought through the wall separating the powerhouse and the battery charging station in permanent conduits with two or three leads coming through each conduit. The 12 rider-type trucks are parked at the charging station by their operators. A powerhouse attendant records the specific gravity of each battery, and plugs in the battery for overnight charging.

Eleven rider-type trucks are assigned to jobs on a daily basis. Nine of these are 6000 pound fork-lift trucks and two are low-lift platform trucks. One truck with a crane is divided between the shipping and maintenance departments. Battery size has been standardized so that any battery can be used in any truck.

Although charging is done in the trucks, a hoist mounted on a boom is available for changing batteries when necessary. Batteries are cleaned periodically in the garage with steam followed by soda applied with a brush and rinsed off with water.

Pictures by courtesy of Gould-National Batteries, Inc.

Two hundred-watt 36 volt locomotive headlight is placed in special bracket on fork-truck and plugged into truck battery to furnish light in any kind of emergency.

Note special flood lights operated from truck batteries available in brackets on wall at charging station for emergencies.

In picture above battery is being cleaned with steam preparatory to being brushed with soda and washed with water in regular battery maintenance and cleaning procedure.

A SAFETY IDEA

America's utility companies have been given a new weapon in their continuing fight to reduce accidents.

It is a guy wire protector with two bright red luminous areas that serve as warning signals during the day and reflect illumination at night.

Guy wire protectors are the metal shields that cover guy wires extending to the ground level from the poles erected by electric and telephone companies. Because of their greater area, the protectors are more visible than the wires themselves and less likely to be tripped over. In addition, they cover ends of wire that might cause injury.

The luminous areas are expected to make these protectors more visible both day and night, lessening the possibility of injury to pedestrians, and of damage to the protectors themselves.

Picture by courtesy of Hubbard and Co.

Bright red reflective bands on wire guards are new step to protect pedestrians at night against tripping and other accidents.

Plant Maintenance Show

The Plant Maintenance & Engineering Show, one of the largest annual industrial expositions in the country, will return to Philadelphia for the 1956 event, it was announced by Clapp & Poliak, Inc., New York, producers of the show.

Now in its seventh year, the show annually attracts more than 20,000 of the nation's industrial executives who are charged with the upkeep of factories and machines. At the same time, the 7th Plant Maintenance & Engineering Conference also will be presented. This conference, the largest industrial conference in the country, attracts about 2,500 engineers each year.

Two hundred and thirty-six companies leased 302 exhibit booths prior to the public announcement of the show. About 400 exhibitors are anticipated. Exhibits vary over a wide range because they cover maintenance in all its aspects and in every kind of industry. In past shows, as many as 5,000 different products and services in 278 basic types, have been demonstrated.

"The steady trend toward automation and automatic production processes in industry has resulted in a shift of emphasis in engineering," said Saul Poliak, producer of the show. "The principal responsibility of the plant engineer is now that of keeping the automatic machinery running.

"Plant labor is undergoing a shift from direct to indirect. The man who used to operate the machine now maintains it. Thus automation and automatic processes have succeeded in cutting production costs while opening up a new field for further cost reduction, that of maintenance," Mr. Poliak said.

Visitors planning to attend may write for advance registration cards to Clapp & Poliak, Inc., 341 Madison Av., New York 17, N. Y.

Railroad Safety Honors

Fourteen railroads were presented E. H. Harriman Memorial Awards for outstanding performance in 1954 in the field of railroad safety. The annual awards, presented by the American Museum of Safety, consist of gold medals for the three railroads which achieved the best safety record in 1954.

The Norfolk and Western Railway received the gold medal for Group A railroads, the largest-size category. Gold medals for Groups B and C railroads went to the Chicago, Indianapolis & Louisville Railway and the Texas Mexican Railway.

Commenting on the awards, James G. Lyne, chairman of the award committee, described the industry's 1954 safety performance as "the best over-all safety record in railway history." While passenger safety did not quite reach the almost perfect level of 1952, it matched that of the second best year, he said. In addition, railroads in 1954 set an all-time high in employee safety.

The following railroads also received certificates of commendation:

Eastern District—Group A—Reading Railroad; Group B—Bangor and Aroostook Railroad; Group C—Pittsburgh & Shawmut Railroad.

Western District—Group A—Great Northern Railway; Group B—St. Louis Southwestern Railway; Group C—Texas & Northern Railway.

Southern District—Group A—Atlantic Coast Line Railroad; Group B—Central of Georgia Railway; Group C—Atlantic and Danville Railway.

Certificates of commendation were also awarded to the following switching and terminal companies (one for large companies and another for smaller companies): Baltimore & Ohio Chicago Terminal Railroad; River Terminal Railway, Cleveland, Ohio.

Winners of awards are determined by a 10-member committee on the basis of the official safety records of the Interstate Commerce Commission, the railroads being ranked in their several groups according to size and individual safety ratings.

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U.S.B. of M. Approved. Has 40 sq. in. filters for Pneumoconiosis producing and nuisance dusts.

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Miniature nose mask for nuisance dusts and fumes.

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DUPOR No. 24

U.S.B. of M. Approved. Has 24 sq. in. filters for Pneumoconiosis producing and nuisance dusts.

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DUPOR No. 10

Chemical cartridges. For organic and inorganic gases.

$5.00

DUPOR No. 20

Double sponge, for cool, water-washed breathing.

$2.50

DUPOR Automatic

With sponge filter for water-cooled breathing.

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DUPOR Smoke Mask

Equipped with "Nod & Shake" fog-proof, gas-tight goggles.

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COVER'S "Nod & Shake" GOGGLES

Gas-tight, fog-proof. Wear with any respirator.

$2.00

(For details, use Key # K-21 on card on page 85)

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He's OUT

The base runner is SAFE—sliding under the catcher's tag to win the World Series.

The victim of a slippery floor is OUT—out of action with a possible fracture—and *you* may be out several thousand dollars.

Play it Safe by maintaining your floors with LEGSURE, the new LEGGE polish that gleams *without* slipperiness. You'll prevent slip-fall accidents because LEGSURE goes up to *75% beyond* U. L. requirements for slip-resistance.

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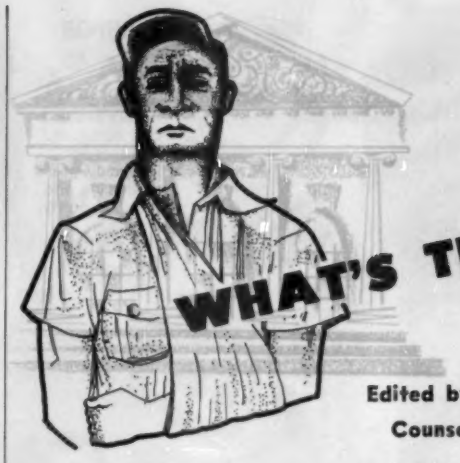

WHAT'S THE LAW?

Edited by HENRY M. GROSSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

INDUSTRIAL NOISE—Compensability

An employee who suffered an impairment of hearing as a result of exposure to industrial noise while working in a drop forge plant was awarded compensation. His disability was declared an occupational disease even though he may have sustained no wage loss.

Green Bay Drop Forge Co. vs. Industrial Commission, (1953) 60 N. W. 2d 409.

It is obvious that in states which follow the rule laid down in this case or have similar statutes, an employer should take whatever precaution is necessary to reduce the amount of noise throughout his plant to prevent this type of award.

VIBRATION—Disease Cause?

Plaintiff developed trophic ulcers of both feet.. There was evidence that his feet were broken down by continued standing in a building which was vibrating from machinery. It was held that plaintiff did not suffer from an occupational disease and that his disability was not caused by an accident.

Schmitt vs. Industrial Commission, (1937) 272 N. W. 486.

In many states, however, if it could be shown that the plaintiff's condition did come from the vibration of the machinery, an award would be given to him.

SILICOSIS—from Employment?

In this case a fertilizer plant worker contracted silicosis, pneumo-coniosis, and tuberculosis, as the result of inhaling dust and fumes. An award was denied on the ground that no specific rule included in the statute pertaining to working conditions and health and safety had been violated by the employer. Therefore the disease, which was obviously contracted in the course of employment, was not compensable.

Grutzius vs. Armour & Co. of Delaware, Inc., (1941) N. E. 2d 707.

The case above is another illustration of the employer paying no award to a disabled employee when the employer has provided the proper health and safe-working conditions according to law.

Chicago Power Show

The Chicago Exposition of Power and Mechanical Engineering will be held in the Chicago Coliseum on November 14 to 18 under the auspices of the American Society of Mechanical Engineers, as a part of the Diamond Jubilee Annual Meeting, which concludes the year-long celebration of the Society's 75th year.

The exposition will cover every phase of power generation and industrial use. Exhibits for which space already has been allotted embrace such widely assorted equipment as Diesel engines, electric motors, oil purifiers, speed reducers, vibration control systems, electrical testing instruments and instruments for the automatic control of apparatus ranging all the way from machine tools to entire plants for producing power or regulating its use in manufacturing.

For the power plant itself, there will be exhibits of package boilers, car shakeouts, dust collectors, insulation, refractories, feed water heaters and regulators; pumps, liquid-level controls, condenser tubes and water treatment. There will also be new developments in heat exchangers and steam separators, as well as a great variety of valves and fittings, flexible couplings, piping and pipe hangers, to meet the rigid demands of new design in power plants.

Atomic Power Featured

An Atomic Power Section will be a feature of the exposition, disclosing phases of the application of atomic energy to power of special interest to mechanical engineers. This new field imposes many engineering problems that have never before been encountered, from the shielding of reactor plants and radio-active materials in transit and in use, to the conduct of many manufacturing operations by remote observation and control.

The Chicago Power Show is under the management of the International Exposition Company, 480 Lexington Ave., New York 17, N. Y. E. K. Stevens is the exposition manager.

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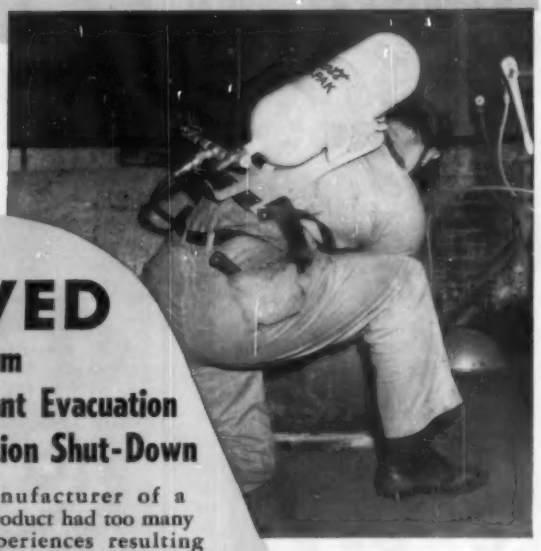
Cut Repair and Maintenance Costs, Safely!



SAVED from Complete Plant Evacuation and Production Shut-Down

• This manufacturer of a chemical product had too many costly experiences resulting from leaks of ammonia and chlorine. It meant complete evacuation of personnel, opening windows to lower gas concentrations and prolonged attempts to fix the leaks by workers wearing inadequate cannister masks. Repair work was painfully slow because repairmen had to make frequent trips to windows for fresh air. It was a costly procedure.

Now — equipped with Scott Air-Paks, repairmen are able to make quick repairs with complete breathing safety. Evacuation of personnel is unnecessary. Result: no lost time — no production losses. The Scott Air-Paks have paid for themselves many times over!

Do you have a similar problem? Then write for the free booklet "Scott Air-Paks Save Money, Man Hours and Men for Industry."

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(For details, use Key # K-23 on card on page 85)

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DUST CONTROL means each machine has its own custom-tailored dust collector designed to work specifically for *that* machine. There is no guess work, or average suction. Furthermore, dust control is provided only when that machine is running . . . there is no waste of power such as you have with centralized control when only a few machines are operating. This means better dust control at lesser operating cost and less initial installation cost. Get the facts now on how Torit will work better to . . .
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(Use Key # K-24 on Inquiry Card on page 85)

For a considerable time, this publication has been most anxious to present to its readers information on the ways and methods of conducting effective safety programs. Beginning with our November issue, we plan to enlarge and expand this service to include basic programs used successfully for both plant and driving safety. We would welcome case histories of programs that have done a good job for you in preventing accidents. We believe that we can be a medium for the interchange of "tried and proved" programs that really sell safety. Merely address your letter or memorandum to The Editor, Safety Maintenance, 75 Fulton St., New York 38, N. Y. and enclose with it an outline of how you organize and launch your safety programs or actual literature you use in publicizing them. Safety is a cooperative venture—what helps one helps all.

A grandfather with 25 consecutive years of safe driving to his credit shared his traffic safety knowledge with the entire nation last month. An Associated Transport driver, Alfred Young of Buffalo, N. Y., was heard from coast to coast on the National Broadcasting System's pre-Labor Day "Monitor" show.

Besides giving safety advice, Young also related some of his experiences during his accident-free quarter century of driving two million miles, the equivalent of sixty times around the world.

While in New York City, in addition to press interviews, Young appeared at City Hall where Associated had set up a special safety display and driver testing clinic. Here he is receiving a special award from M. D. Kramer, Assistant to the President of Associated Transport.

The presentation of this award to Young for his driving skill, for that is what **safe** driving actually is—driving skill, is a dramatic highlight of Associated Transport's comprehensive program to stimulate greater safety practices by their truck drivers. In their program, drivers are rewarded for both accumulated and consecutive years of safe driving.

For every year a driver has a perfect safety record, he receives a jeweled gold lapel pin indicating the number of years of his safety record. When he achieves a 5-year consecutive record, he is rewarded with a watch, ring or silverware. For 10 years of accident-free driving, the A.T. drivers are given a metal-etched card mounted in a card case.

During the most dangerous driving months of the year, special incentives are offered in the form of pens, radios, and other personal items. It has been found that stress on ladies' awards encourages wives to assist their husbands in achieving safer driving habits.

Employees of National Tube Div.'s Lorain Works have added an all-time United States Steel Corp. record to their growing list of safety achievements.

Robert Urquhart, general superintendent, announced that the nearly 12,000 employees of the Lorain plant last August compiled 5,145,239 manhours of work without a disabling injury to topple the previous U. S. Steel safety record for an integrated steel plant. The new record is roughly equivalent to one employee working a total of more than 2,400 years without a disabling injury. The best previous mark was established last year by Gary Steel Works in Gary, Indiana.

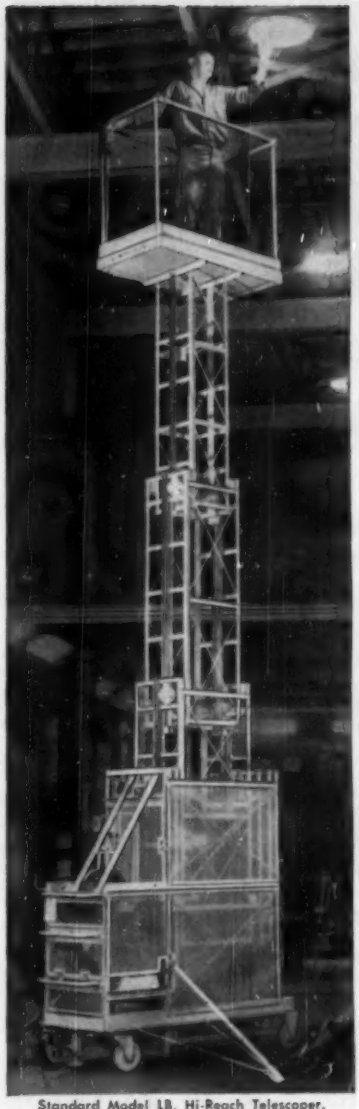
• • •

Nineteen years of accident-free driving, covering 225,000 miles, earned a National Safety Council award for Ervin Deisinger of the Miller Brewing Company's Milwaukee City Sales Department. Deisinger, who compiled his entire safety record in city traffic, encountered a minimum of three million intersections and backed up his vehicle at least 120,000 times.

• • •

The steel industry's disabling injury frequency rate—lower in 1954 than ever before—was about one-half of the all-industry average, acording to American Iron and Steel Institute. The rate for the steel industry was 3.85 disabling injuries per million man-hours worked, while the average for all industries was 7.22 according to statistics of the National Safety Council.

The steel industry has steadily reduced its rate for ten consecutive years. The rate for 1954 was 52 percent lower than ten years earlier, in 1944. Further evidence of the steel industry's progress in safety is found in a recent report by the U. S. Bureau of Labor Statistics for the first quarter of 1955. In a list of 130 manufacturing industries, blast furnaces and steel mills (i.e., basic steel) ranked fifteenth. This means that 115 industries had a higher accident frequency rate than basic steel, during the first quarter of 1955.



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Standard Models available from 10'-9" to 35 ft. high, and custom-built units as high as 100 ft. if you like.

If you have an overhead service problem or need a special material handling machine, Economy can build it. And you can be sure of complete satisfaction in performance.

Economy representatives, trained in engineering, are located in all principal cities. Call one in on your overhead servicing, or material handling problem. Estimates made without obligation.

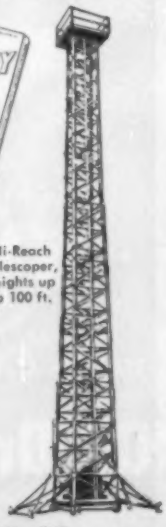
Write for new Catalog No. 55.

Forty pages of pictures and suggestions for special and standard machines.

Standard model PUL with extended platform for servicing over floor obstructions. Counter-balanced base.

Worklifter, battery powered

Standard Model PUL



Hi-Reach Telescoper, heights up to 100 ft.

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(For details, use Key # K-25 on card on page 05)

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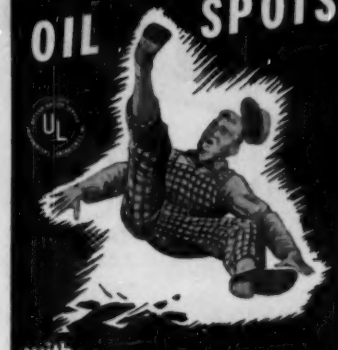

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(Use Key # K-26 on Inquiry Card on page 85)

High Cost of Horseplay

(Continued from page 24)

another employee for a bottle of liquor. The employee took a drink and proceeded to get the boy drunk. When the youth was so intoxicated that he couldn't stand, he was carried to a cot near a boiler to sleep it off.

While the boy was sleeping, the employee thought it would be great fun to daub the boy's face with various colors of paint. When the paint job was finished, the employee and other workers got quite a laugh out of the sight. The merriment attracted the attention of the foreman, who then ordered the employee to remove the paint, carefully specifying that he use soap and water and not gasoline in the process.

The employee, however, disregarded this warning and picked up a can of cleaning fluid, containing gasoline. The fumes were ignited and the employee was burned to death. In this case, the prankster and not the victim, paid with his life.

An interesting sidelight to this case illustrates the point that perpetrators of jokes can pay in more ways than one for their dangerous pranks. Dependents of the deceased jokester filed a claim for a death award but it was denied by the Ohio Industrial Commission. Ultimately the case came before the Ohio Court of Appeals, which upheld the ruling of the Commission.

"We cannot escape the conclusion," ruled the Court, "that where the injuries were sustained or death was caused through an attempt to correct a dangerous situation or a wrong done by horseplay or fooling, the attempted correction is just as independent of and disconnected from the performance of any duty as the act of the prank horseplay or fooling, and the injuries or death do not arise out of the employment and most certainly the employment has no casual connection, either through its activities, conditions or environment, with the injuries or death."

Another instance in which the perpetrator suffered more than did the butt of his joke took place in Ohio. A truck driver employed by a gravel company walked up behind and grabbed another employee, a shovel operator, who was in the act of pumping gasoline into his tank. The shovel operator warned the truck driver to leave him alone, and resumed his pumping operation. The truck driver, a persistently playful prankster, sneaked up again and pulled the shovel operator's cap down over his eyes. The infuriated shovel operator pulled out the removable pump handle and flung it in the direction of his tormentor. The heavy, metal handle struck the driver on the leg.

Promptly, the truck driver filed claim for injury, but the Court ruled that "conduct of the plaintiff amounted to nothing less than horseplay on his part, such as would hinder work, not further it. . . . In close and doubtful questions, I personally believe a court should give the benefit of the doubt to the worker. Statutory presumption so indicates and this court has and will follow such presumptions in carrying out the spirit of the workmen's compensation act. However, in this case, it is crystal clear from the evidence that plaintiff abandoned the purpose of his employment by engaging in such immature and rude actions of horseplay."

"Horseplay, teasing and practical joking are ever-present bugaboos which plague both management and union officials alike," according to Jerome A. Lukins, president of The Interstate Industrial Protection Co., which has furnished uniformed guard service for the past 25 years to more than a hundred plants in diversified industries throughout New York, New Jersey and Connecticut.

"By their very spontaneous nature, they are difficult to anticipate and control. However, it has been our experience that the very presence of uniformed guards has had the effect of reducing the accident rate in plants where jokesters hitherto had ignored pleas and commands of both foremen and shop stewards to 'cut out the clowning.'

"A uniformed guard, particularly one not on the plant payroll, is not anxious to be considered 'one of the boys,' nor does he resent being called a killjoy or wet blanket. The men realize that he has a job to do, that he can't be swerved from his duty, and they respond accordingly."

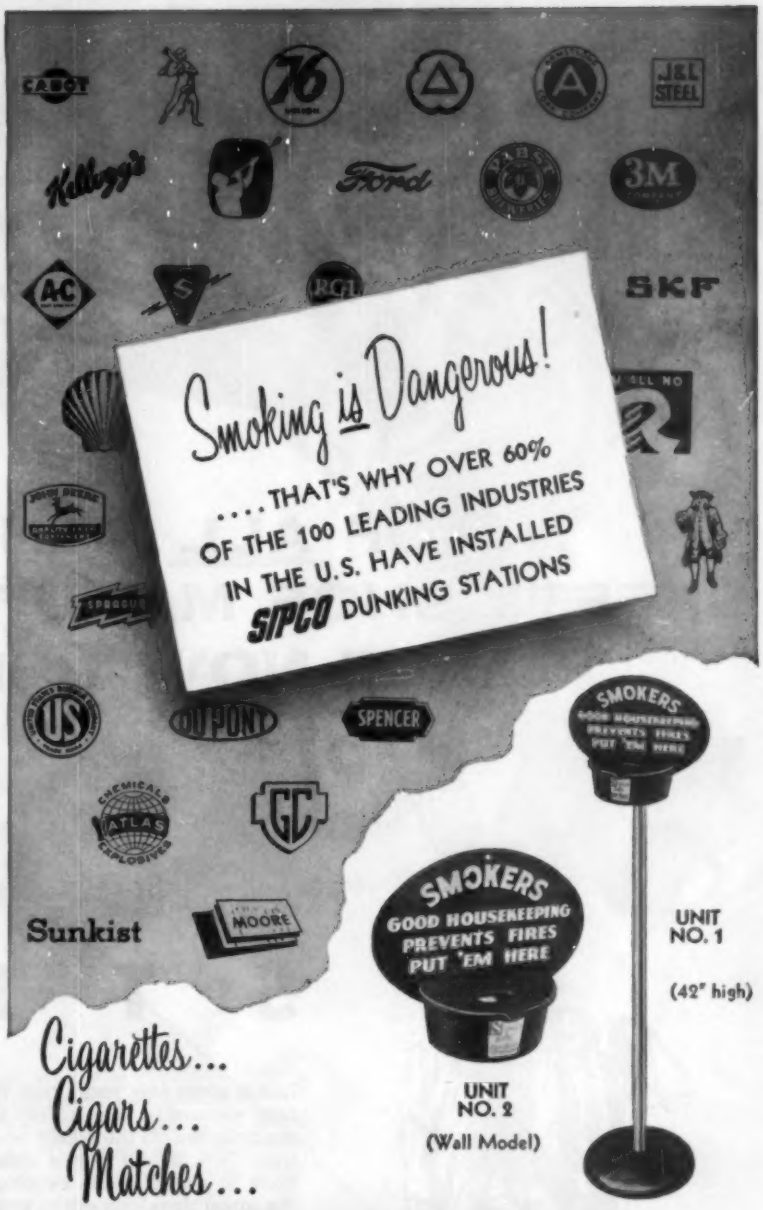
Military Issues Handling Manual

The first installments of a new comprehensive joint departmental manual governing uniform storage and materials handling methods and procedures for the Military Departments is now being distributed, Thomas P. Pike, Assistant Secretary of Defense (Supply and Logistics) announced recently.

The new publication, "Storage and Materials Handling Manual," which is being jointly developed by the Military Services, establishes uniform mandatory methods and procedures governing all phases of military warehousing. The first installment covers the storage of lumber, unit loads, and on-the-job training for operators of materials handling equipment.

Other sections of the manual are in preparation and will be completed within the next few months. Chapter I contains a general introduction. Chapter II will cover storage space (including types of facilities, planning the storage layout, space requirement factors, design of stock location system, effective utilization, and space control and reporting). Chapter III will contain storage procedures covering receiving, shipping, stock location, stock fumigation, stock discrepancies, stock number changes, inventory, and care of supplies in storage. Chapter IV of the manual will deal with materials handling equipment and principles including basic principles, selection of equipment, requirement factors, loading and unloading, and unit loads. Chapter V will contain procedures on the storage of special commodities including lumber, ammunition, vehicles, hazardous commodities, subsistence, miscellaneous commodities, and drummed petroleum products.

Mr. Pike indicated that these uniform procedures will enable the military departments to work together more effectively. The advantages of cross servicing, including greater flexibility in positioning stocks and minimizing cross hauls and backhauls, depend to a large degree on interdepartmental uniformity of warehousing procedures. The result will be better logistics support of military operations attended by important savings.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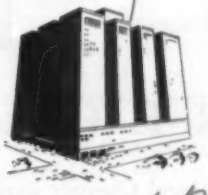

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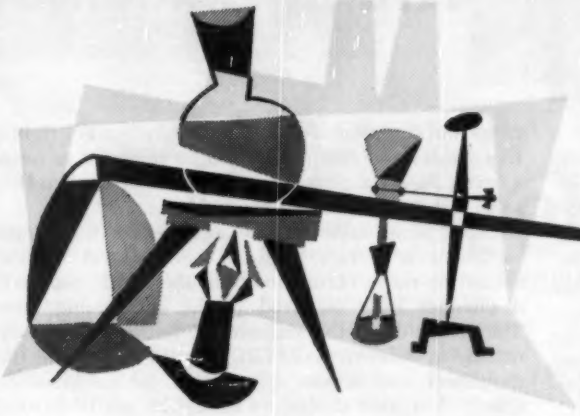

industrial hygiene

The Industrial Medical Team

The scope of occupational health service as now practiced in industry varies from simple first-aid to highly complex activities of doctors, nurses, hygienists and engineers, engaged in the solution of health problems vital to the continuation of a manufacturing program, or even to the survival of a business.

To carry out an effective industrial medical service, management must provide the facilities and staff, medicine must provide skilled doctors, nurses and technicians imbued with the philosophy of preventive medicine. Such is the industrial medical team.

Now let's take a closer look at this "industrial team."

The Doctor

The first part of a company's medical program—dependent of course upon its size and financial abilities—is to secure a full or part-time physician.* The doctor should correlate the nursing, safety, hygiene and environmental conditions of the plant within the medical program.

The medical program should provide periodic inspection of the plant in addition to health preservation measures including pre-employment and periodic physical examinations, emergency treatment of employees taken sick on duty, first-aid and matters of infection, diagnosis and follow-up of occupational diseases and injuries, cooperation with the private physician, education of employees in health preservation, conferences with management on matters pertaining to industrial health, and accurate medical records.

The Nurse

The increasing importance of industrial health has given new value to the competence of industrial nursing in preventive medical programs.

To talk about a plant physician's work is to talk about the nurse's work too. They work so closely as a team that it is difficult to separate their jobs. The industrial nurse gives treatment that does not require medical diagnosis. She performs her duties under a written set of "standing orders" from the doctor. She does administrative work, the keeping of medical records, advisory and follow-up of cases, and employee educational activities in preventive health.

The Industrial Hygienist

The industrial hygienist, working with the medical department, supplies special knowledge to control the environmental conditions for the employees, such as control of exhaust gases which may pollute the air, potential health hazards such as water supply, light, noise and sanitation.

In cooperation with the hygienist, the plant engineer must install equipment that means better health for all workers. Mechanics must keep such equipment as dust collectors in proper condition. The industrial hygienist must also check for conditions such as con-

(Continued on page 58)

* HOW MANY DOCTORS?
How many physicians are needed for a preventive health program? Dr. Frank A. Calderone, President of the Occupational Health Institute, gives this rule of thumb:
One hour of doctor time per employee per year is the optimum goal if all services of an all-inclusive program are provided.
He advises small plants to jointly finance a central clinic or hire a physician fulltime and divide his services. Two or more small companies together can establish a full-time health program for less money than if each hires part-time medical help.

The Industrial Nurse ...and Audiometry

The audiogram, as any other medical record, is a medical-legal document. Therefore, the nurse audiometrist has a meticulous duty to assure the accuracy and reliability of all the factors that might affect the validity of the audiogram, such as the calibration of the audiometer, the fit of the earphones, the absence of interfering background noise, and the skill of the operator.

Instrument calibration of the audiometer should be obtained at regular intervals. In the periods between these more reliable calibrations, the skilled audiometrist, by checking her own or a known associate's hearing, will be able to detect an instrument that has gone out of calibration. Thus daily, or more frequent checks, particularly important in survey work, may avoid the necessity of discarding data at a later time.

Important among the factors which the critical operator will consider is the fit of the earphones. The hole in the earphone should fit directly over the ear canal and the phones should fit snugly but not tightly. Eye glasses and earrings should be removed to insure a better fit of the phones. Hair should be pushed back so as not to interfere with hearing.

Background noise in the audiometer room must be below a certain level and noise level analyses should be made occassionally in the booth, especially if changes have occurred in the surrounding area. The person doing the audiometric testing should work rapidly in order to avoid fatiguing the testee, but thoroughness and accuracy must not be sacrificed for speed. A written procedure should be available to all who perform such tests.

The attitude of the operator is as important as his skill, if the data is to be reliable. The person must be relaxed if he is to cooperate and get an accurate hearing test. A friendly manner on the part of the operator will help put him at ease. A simple explanation of the procedure will help to allay apprehension and encourage the person to respond easily and rapidly. The nurse must realize that many people with hearing loss have emotional problems. Tinnitus, or ringing in the

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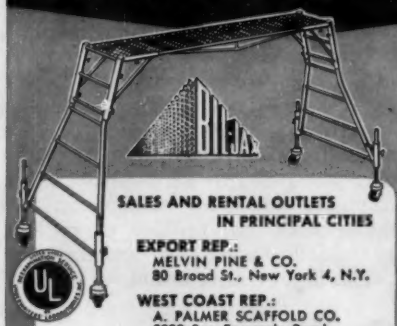

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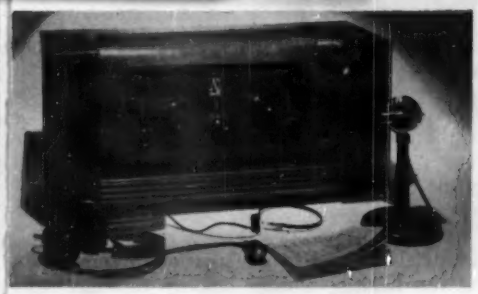
Better Protection of Workers

"Up to the present the atomic energy industry is widely believed to be safer than other comparable branches of industry" declares a paper which the International Labor Organization contributed to the International Conference on the Peaceful Uses of Atomic Energy in Geneva last summer.

The paper called "the Protection of Workers Against Ionizing Radiations" goes on to explain that this situation is largely due to the fact that the atomic energy industry "is still in the experimental stage, is progressing cautiously under government auspices and is controlled by highly specialized staff having necessary background knowledge." It adds:

"In fact, while in nuclear research centers or atomic energy establishments the risks inherent in ionizing radiations and the indispensable precautions that they call for are perfectly well known, this is not so in the numerous industrial and other establishments that are already using radioactive substances or will be using them in the near future. It is thus on this kind of use that preventive action, and hence training activities, should concentrate if workers are to be adequately protected."

The radiations covered are X-rays, gamma rays, alpha particles, beta particles and neutrons. The paper deals mainly with the nature of injuries caused by ionizing radiations: standards of exposure to these



Part II

by **ANNE G. BAKKER, R.N.**
Eastman Kodak Company
Rochester, N. Y.

ears, may result in great discomfort and instability. The person with a hearing loss may hesitate to keep asking people to repeat conversation and, in some cases, may actually avoid social contacts.

Repeatedly making audiograms tends to become monotonous unless the operator knows and believes in the need for accuracy and consistency. A knowledge of the over-all field of the noise problem, including noise level analysis and noise control methods, as well as audiometric testing, helps to keep the operator's interest alive and active. Knowing the noise level of the area in which the employee works gives the nurse a better understanding of worker's problems.

All of these factors and conditions emphasize the position of the nurse audiometrist as a team member.

From an address before the 1955 Industrial Health Conference.
Reprinted by courtesy of American Association of Industrial Nurses' JOURNAL.

Against Radioactivity Hazards

radiations; uses of such radiations; and protection against them.

The section on protection is very comprehensive. It first sets out the principles underlying protective measures. Then it deals with generally applicable precautions such as the proper planning and equipping of plant, precautions against inhalation and ingestion, limitation of working hours, monitoring, the handling of radioactive substances, the disposal of waste, supervision and training of personnel, and medical supervision.

The paper also briefly discusses problems arising in uranium mining and processing; and safety in transport of radioactive substances. It attaches considerable importance to the proper packing and labelling of consignments and refers to the new danger symbol designed by the Office and discussed by the ILO Chemical Industries Committee and other agencies.

Appendixes include the chapter on dangerous radiations contained in the ILO's Model Code of Safety Regulations for Industrial Establishments; examples of medical record forms; and recommendations on the prevention of dust in mining, tunnelling and quarrying adopted by a meeting of ILO experts in 1952. Copies of the paper can be obtained for 50 cents from the International Labor Office, 917 15th St., N. W., Washington 5, D. C.

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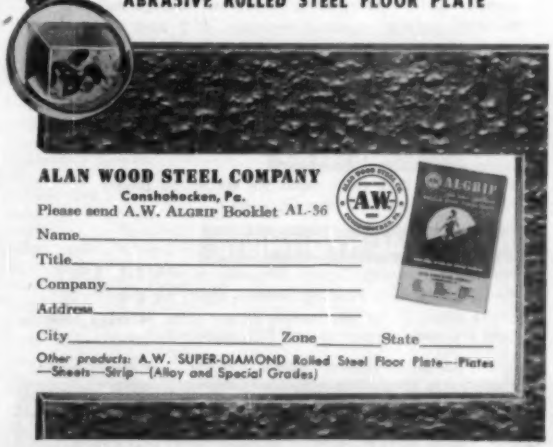

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The Industrial Medical Team

(Continued from page 55)

centration of carbon monoxide where trucks are used. He trains foremen in the use of toxic materials. In cases of injury, he confers with the doctor and plant engineer to see if some plant condition can be corrected.

For the "industrial medical team" such a program means keeping the healthy worker healthy through prevention of illness and injury, promoting health and safety, and first-aid for the injured.

This is the first in a series of articles on industrial medicine and preventive health practices. Requests for information on occupational and employee health programs or problems may be addressed to: Occupational Health Institute, Inc., 6 East 39th Street, New York 16, N. Y.

The Cost of Illness and Accidents

The National Association of Manufacturers reports that a 500-man plant has an expectancy each year of 335 days of disability due to industrial diseases and accidents, and 4,500 days due to non-occupational illness and injury—a total of 4,835 man days lost per year. Translated into money, this represents an average wage loss to employees of $74,782 a year, based on a $15.26 daily wage, based on the Bureau of Labor Statistics wage index for May, 1955. This amount of loss is in proportion to the number of employees in a plant, so that in a 100-man plant the wage loss is about $14,756, and in a 10,000-man factory almost $1,500,000.

Such a loss is inevitably associated with disruption of production. In addition, it directly affects sales and therefore profits. Illness even indirectly attributable to occupational injuries or disease may also affect compensation costs. While there is an irreducible minimum number of days lost due to illness and accident, there are ways and means to cut losses to arrive at this minimum through a preventive health program.

The value of an industrial health program is published in the Occupational Health Institute's current Service Bulletin, "Your Company . . . Why An Accredited Medical Program?" It is free upon request.

A.P.H.A. Meeting

The 83rd annual meeting of the American Public Health Association and meetings of 40 related organizations will be held in the Kansas City, Missouri, Municipal Auditorium, November 14–18.

According to Dr. Reginald M. Atwater, executive secretary of the Association, the overall theme of the meeting is "Where Are We Going in Public Health?"

More than 400 scientific papers will be presented on public health topics ranging from prevention of home accidents caused by the do-it-yourself trend, through how to operate a fleet of cars at 3¢ a mile, to combatting cancer, tuberculosis, smog and radiation fall out. Members of various professions within public health—physicians, nurses, dentists, veterinarians, engineers, sanitarians, statisticians, nutritionists, entomologists, biologists, health educators and others—will share latest findings in their fields.

Occupational Dermatitis—

Industry's Biggest Disease Problem

"**Diseases of the skin** are taking a far **larger** toll of the nation's industrial output, in terms of lost productive time and compensation payments, **than all other occupational diseases combined.** The cost to industry of the average industrial worker hit with a skin disease is: 10 weeks off the job; 100 dollars in compensation payments; and 90 dollars for medical care; totalling far more than 100 million dollars annually."

These statements were made by Dr. Louis Schwartz, widely known industrial dermatologist and former Medical Director of the U. S. Public Health Service, at a press conference announcing publication of a new industrial guide booklet he has authored, published by the Association of American Soap & Glycerine Producers, Inc., titled "The Prevention of Occupational Skin Diseases."

Recent statistics compiled from a pilot survey of 11 states by the Division of Occupational Health of the Public Health Service reveal that industrial dermatoses annually account for 75.3 percent of all occupational diseases. In the 11 state area alone, 6,817 cases of skin disorders were reported, as against 2,241 cases of all other occupational diseases.

Occupational skin diseases are the most common of all occupational diseases . . . because the skin is the most external as well as the largest organ of the body and is the first exposed to environmental irritants and poisons. "The menace of occupational skin diseases to the health and life of America's 60 million or more workers can be radically reduced by the inauguration of adequate plant cleanliness programs, and most skin diseases can be entirely avoided by proper washing procedures, showering and wearing of clean and suitable protective clothing," Dr. Schwartz asserts.

Preventive Measures Can Reduce

Preventive measures can reduce the great toll taken by skin diseases in all types of industry, he continues, revealing that incidence of industrial dermatitis ranges from a high of 7.5 percent in the synthetic resin manufacturing industry, to a low of 0.4 percent for automobile manufacture. (See Table I for all industries)

Dr. Schwartz's new booklet also shows the major causes of occupational dermatitis. Highest on the list

TABLE I

Yearly Prevalence of Occupational Dermatoses by Industries

Industry	Number of Workers	Dermatoses	Percent
Synthetic resin manufacture	700	53	7.5
Chemicals and dye manufacture	2,500	176	7.0
Tanning	565	20	3.5
Oil refining	14,000	473	3.3
Candy manufacture	1,236	36	3.0
Fabric dyeing	3,800	76	2.0
Rayon manufacture	4,000	80	2.0
Steel manufacture	3,500	52	1.5
Fur dyeing	1,600	17	1.0
Rubber manufacture	8,000	84	1.0
Glass manufacture	5,700	54	1.0
Automobile manufacture	72,000	281	0.4
Total	117,601	1,402	1.2

TABLE II

Causes of Occupational Dermatitis

Material exposure	Number	Percent
Petroleum products and greases	7,805	18.8
Alkalis (and cement)	4,881	11.7
Solvents	3,265	7.8
Plants and woods	2,719	6.5
Metals and metal plating	2,482	6.0
Rubber and its compounds	1,314	3.2
Burns, physical and mechanical agents	1,313	3.2
Chemicals, unspecified	1,253	3.0
Paints, enamels, and varnishes	1,132	2.7
Acids and acid fumes	978	2.4
Dyes and dye intermediates	974	2.3
Chromates and chromic acid	727	1.7
Biologic agents	520	1.3
Coal tar products	462	1.1
Furs and fur dyes, and hides	425	1.0
Synthetic resins	390	0.9
Nonmetallic elements	185	0.4
Oils, vegetable (oils, fats, and waxes)	92	0.2
All other known exposures	8,064	19.4
Unknown exposures	2,647	6.4
Total	41,628	100.0

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are cases reported due to petroleum products and greases—18.8 percent—while the fewest number of cases—0.2 percent—result from vegetable oils, fats, and waxes. (See Table II for complete report on causes.)

Stressing the vital need to safeguard industrial workers from actual or potential skin irritants in advance, Dr. Schwartz presents a brief study of the anatomy and physiology of the skin, and lists causes of occupational skin diseases under 5 main headings:

1. **Mechanical**—friction, pressure, injury.
2. **Physical**—heat, cold, radiation.
3. **Plant poisons**—several hundred woods and plants.
4. **Biological**—bacteria, fungi, mites, etc.
5. **Chemical agents**—"primary irritants," such as strong acids or other corrosives; and "sensitizers" like TNT or resins that do not cause dermatitis at once but pave the way on further contact.

The synthetic resin, chemical, petroleum, and automobile industries rank high in a list of occupations most subject to dermatoses. Other industries included are food canning, rayon, rubber and glass manufacture.

Then Dr. Schwartz outlines the most effective, usually relatively simple, measures for preventing dermatoses on the job. Chief among these is **personal cleanliness**, without which any program of plant protection must fail, according to the doctor.

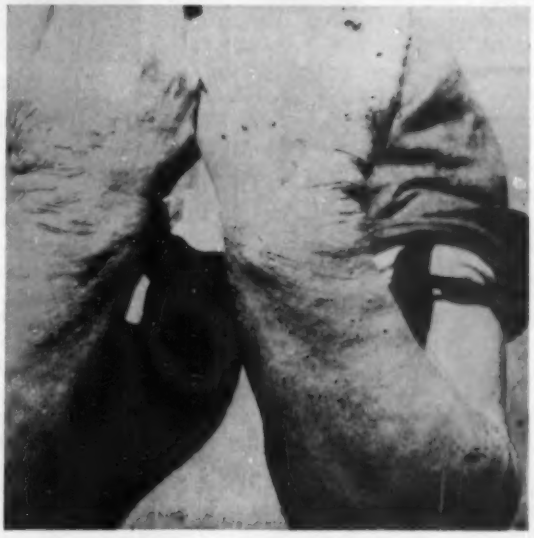
An Effective Cleanliness Program

An effective program of personal hygiene will provide for quick removal from the skin of any irritants unavoidably contacted at work. Such a program should:

1. **Provide** running hot and cold water, a proper industrial cleanser and towels no further than 100 feet from the place of work; and enough showers so no worker need wait more than a few minutes.
2. **Educate** workers thoroughly in the importance of personal cleanliness, through posters, safety meetings and campaigns.
3. **Allow** for inspection of workers' skin at periodic intervals.
4. **Provide** the skin cleaner best fitted to combat the irritants involved in a particular type of industry.

Dr. Schwartz examines the antibacterial properties, pH concentration and cleansing power of many kinds of available industrial cleaners—solid, liquid, powdered, and superfatted soaps (including a special "indicator" soap that turns bright red in the presence of even minute amounts of TNT): soluble and insoluble scrubbers; synthetic detergents, sulfonated oils, and waterless cleansers.

Beyond personal cleanliness, writes Dr. Schwartz, "'environmental cleanliness'—often called 'good housekeeping'— is essential in any industrial plant." Good industrial housekeeping reaches into many corners, and includes proper plant ventilation and design in order to reduce initial contact with irritants to a minimum, and the provision of protective clothing where warranted. Of considerable help, too, are vanishing, water-repellent or solvent-repellent ointments and



ABOVE—Petroleum solvent used to clean hands caused this. UPPER RIGHT—Chloracne, from clothing soaked in cutting oils. MIDDLE RIGHT—Wool dyes caused this special type dermatitis. LOWER RIGHT—Dermatitis from contact with phenolic resin glues.

creams, and special lotions to prevent excessive drying and chapping of the skin.

The Skin—A Complex Mechanism

According to Dr. Schwartz, an understanding of the complex nature of the skin is one of the first steps in combatting dermatitis. With its subdivided three layers, its many openings, and its protecting, and secretory and excretory functions, the skin composes an entire, separate system of the body.

The ability of the skin to absorb chemicals, mineral fats and oils, as well as some gases is an important factor in occupational dermatitis. Dr. Schwartz also points out that the "acid-mantle" on the skin, which serves as a barrier to disease, can be washed off too easily; or, if allowed to remain unwashed, will decompose and develop an offensive odor. Still another important physiological fact about the skin is that sweat, while sometimes a protective coating against disease, can also soften the skin to such a point that it becomes more vulnerable and permeable by external irritants.

"Then too," adds Dr. Schwartz, "study has shown that there are certain predisposing factors, including race, type of skin, tendency to excessive perspiration, diet, age, sex, season of the year, already-existing skin diseases and most importantly, lack of cleanliness."

Allergic dispositions play only a small part, he concludes.

Better Prevent—Instead of Cure

Difficult to detect and diagnose, often resistant to treatment, most industrial dermatoses have proved to be test cases of the old adage, "an ounce of prevention is worth a pound of cure."

Pictures by courtesy of The Association of American Soap and Glycerine Producers, Inc.

KEEPING UP WITH...

DERMATITIS RELIEF

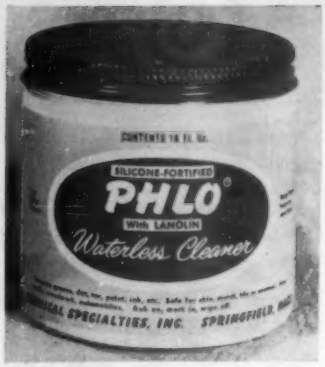
A non-irritating, greaseless vanishing cream for the relief of several types of skin rashes and infections has been developed by Dermatar Co., Inc. Called "Carbo Cream," the product contains a coal tar preparation as a soothing agent, and other ingredients are said to have a stimulating effect on denuded tissues. When massaged well into the affected area, the cream provides relief for oil and other industrial dermatitis, athlete's foot, ring worm, acne, eczema, poison ivy and other skin disorders, according to the manufacturer.

For details, use **Key # FA-1** on Inquiry Card on page 85.

AEROSOL BURN SPRAY

Dangerous, painful burns, whether caused by fire, electricity, scalding or sun, demand immediate treatment. The E. D. Bullard Company's "First On Burns," packed in 5-oz. aerosol containers, relieves pain, protects against infection and aids healing. The company states that the product is non-toxic and non-irritating to children and adults; and that it may be used safely on any part of the body. Application of the burn medication by aersol spray is quick, painless and sanitary.

For details, use **Key # FA-2** on Inquiry Card on page 85.



WATERLESS HAND CLEANER

To remove grease and grime, tar, asphalt, glue, paint and similar industrial soils, Chemical Specialties, Inc. has developed PHLO Waterless hand cleaner. This cream-type cleaner is milky white and of a smooth consistency. It is merely rubbed onto the hands, massaged briefly and wiped off. The new cleaner contains silicone and lanolin. There is no ammonia, abrasive, alkali or acid to harm delicate skin tissue or cause chapping.

For details, use **Key # FA-3** on Inquiry Card on page 85.

SCOOP TYPE STRETCHER

A new kind of first aid stretcher that permits the injured person to be picked up and transported with a minimum amount of movement of his body is announced by the A. E. Halperin Co., Inc. The company claims that the new Robinson Orthopedic Stretcher allows attendants to carry the victim to the first aid station without causing any further damage or injury to him.

The injured person does not have to be lifted onto the stretcher, but

FIRST AID & HYGIENE SERIES
other articles in August and Sept.

First Aid & Personal Hygiene Developments

is positioned by means of a "scoop" principle. The unit is made of light-weight tubular steel with a canvas head rest. It can be adjusted up to a 7′ 3″ length and can support patients weighing over 300 lbs.

For details, use **Key # FA-4** on Inquiry Card on page 85.

SILICONE CREAM

This newest addition to MSA's line of "Fend" Creams and Lotions utilizes the chemical inertness, adhesiveness and ability to repel moisture of silicones, incorporated in a bland vanishing cream.

The film provided by "M-S-A Fend-Silicone Cream" will protect the skin against such common irritants as soaps, detergents, industrial chemicals and allergens. This cream is non-toxic and is buffered to the average pH of the acid mantle of the skin. This tough durable water-repelling barrier is invisible on the skin and will not interfere with the normal action of the skin glands. It is available in 3 oz. tubes for individuals or in 1 lb. jars for use in dispensary or wash room.

For details, use **Key # FA-5** on Inquiry Card on page 85.

COUNTER-BALANCED MAGNIFIER

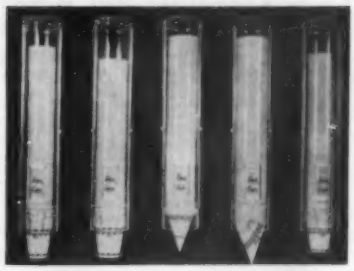
The illuminated magnifiers made by The Haas Corp. for the clearer and more effective inspection and treatment of injuries in first aid rooms and hospitals have recently been improved with a finely balanced arm which adjusts quickly to any position. The nurse or doctor can have magnified vision with good lighting under instant control for the counter-balanced arm will stay in any position without locking. Fluorescent tubes on each side of the magnifying lens distribute light evenly without glare, heat or shadows. Both hands of the nurse are free at all times to concentrate

on the work. Available with either a pedestal base or a clamp base, the new magnifier provides better examination of superficial wounds, lesions, eyes, throats, and x-ray plates.

For details, use **Key # FA-6** on Inquiry Card on page 85.

WATER CUP DISPENSERS

Five new clear plastic water cup dispensers have recently been developed by the Dixie Cup Co. for its cone shaped or flat bottom water

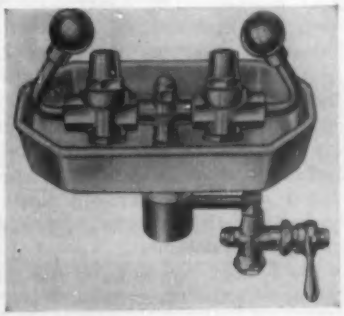


cups. To provide sanitary drinking cups at water coolers, the dispensers are economical, durable, attractive and easily cleaned. The clear plastic permits quick inspection for the need for refills. For industrial plants, the company can provide paper cups with 36 different safety messages, printed in series, and assorted within a tube, at no extra cost.

For details, use **Key # FA-7** on Inquiry Card on page 85.

EMERGENCY EYE FOUNTAIN

The Emergency Eye-Wash Fountain, developed by the Haws Drinking Faucet Company, makes it possible for injured workers to wash injurious chemicals and foreign matter from their eyes with ordinary tap water, while medical aid is being summoned. The device operates in the same easy manner as a drinking fountain and has



special regulators, governing both pressure and volume of water, to prevent injury to delicate eye tissues.

The Haws company also provides Emergency Drench Shower Bath equipment to cleanse worker's clothing of acids or caustic chemicals, in those first vital moments following contamination. Drench showers can be installed in conjunction with the Eye-Wash Fountain, with a drinking fountain attached or separated. The Eye-Wash Fountain may be obtained for deck mounting and is also available on a pedestal with foot treddle operation.

For details, use **Key # FA-8** on Inquiry Card on page 85.

WATERLESS SKIN CLEANSER

The "Ever-Ready Waterless Skin Cleanser" developed by Lightfoot Schultz Co. comes in a self-dispensing plastic bottle. The new cleanser is made with lanolin and does not contain any kerosene, naphtha or other irritating ingredients. It leaves no offensive odor, and the manufacturer states that it has been found to be highly satisfactory by both men and women in industry and offices. The cleanser, which is used, as is, from the bottle and requires no water, is effective in removing dirt, oils, grease, ditto smudges, paints, tars, printers ink and many other substances. In addition to the half-pint plastic bottles, the cleanser is also packed in 5-gallon containers.

For details, use **Key # FA-9** on Inquiry Card on page 85.

ALL-PURPOSE STRETCHER KIT

A compact, light-weight, completely self-contained first aid and field stretcher unit has been announced by Medical Supply Company. Known as the "Haggard's All-Purpose Stretcher Kit," it contains a stretcher, leg and body straps, carrying straps, traction harnesses, a blanket, first aid supplies, and an instruction book. Sturdily constructed of water-resistant plywood with aluminum fittings, the stretcher folds into a weatherproof zippered carrying case which fits easily into a car trunk. The new design permits its use as a fracture board, traction splint, or "Eve" rocking resuscitator, in addition to being able to transport patients in either a horizontal or an upright position. The complete unit weighs 28½ pounds and can be stored in an area of 24" x 50" x 6". The extended stretcher measures a full 6'2" and can support up to 1500 pounds of weight.

For details, use **Key # FA-10** on Inquiry Card on page 85.

UNIT DISPENSER PACKAGE FOR BANDAGES

A new Unit First Aid Dispenser Pack has been designed by the E. D. Bullard Company. The pack contains 40 CURAD Plastic Adhesive Bandages, 1" wide x 3" long. They are oil-resistant, washable and waterproof; and the adhesive back is protected by polyethylene strips, which, when removed, leave no extra pieces of thread.

The new package has a removable perforated tab. The bandages can be taken from the bottom, one at a time, making them easy to obtain and keeping the remaining units clean and sterile. The new pack is available individually or may be included along with other units in the Bullard "Safety Green" First Aid Kits.

For details, use **Key # FA-11** on Inquiry Card on page 85.

GLASS SLIVER BARRIER CREAM

A barrier cream that was designed to protect industrial workers against small glass slivers while handling glass tapes or fibre glass materials also has many other applications in preventing skin contact with irritating chemicals, dusts and poisonous plants. Called "Sanchia® Silicone Protective Cream" and made by Otis Clapp & Son, Inc., it contains 10 percent silicone and 1 percent lanolin in a greaseless vanishing cream. It can be safely applied to the hands, arms and face (except around the eyelids). Used by mechanics, painters, doctors, nurses, industrial workers, etc., it provides a protective film against chemicals, detergents, dyes, plants, soaps, etc.

For details, use **Key # FA-12** on Inquiry Card on page 85.

RADIATION & BURN TREATMENT

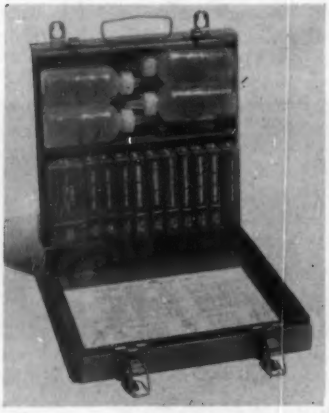
An ointment made from the sap of the tropical Aloe vera plant, lanolin and petrogel, is now available for industrial clinics in treating burns of all kinds. Known as Collins Aloe Ointment, its original

application was in the treatment of roentgen-ray burns. Subsequent tests indicate it is effective in the treatment of other burns due to radiation exposure, such as atomic ray, beta-ray, X-ray, gamma-ray and the sun's rays, as well as chemical, hot metal, electrical, steam and abrasive burns.

According to research reported by Drs. C. C. Lushbaugh and D. B. Hale of the Los Alamos Scientific Laboratory, the ointment is the most satisfactory and successful remedy for the treatment of the devastating skin and tissue damage caused by atomic bomb explosions and in the treatment of burns resulting from exposure to beta irradiation.

Made by Collins Laboratories Inc., the Aloe Ointment is available in 12 oz. jars designed especially for industrial clinics and hospitals. Trial 1 oz. tubes are also available at low cost.

For details, use **Key # FA-13** on Inquiry Card on page 85.



ANHYDROUS AMMONIA FIRST AID KIT

Speed in administering first aid to a person who has come in direct contact with Anhydrous or liquid ammonia is essential. Ammonia may severely irritate the mucous membrane of the eyes, nose, throat and lungs, and prolonged exposure to air containing ammonia, exceeding 700 parts, will cause irritation to the eyes and possibly permanent injury. Ammonia, in direct contact with the skin, freezes tissues. The results are similar to a thermal burn.

"Neutralize," a colorless, odorless liquid, will counteract the effects of ammonia. The product

GLOVE LIFE: ONE WEEK
4 MONTHS

This report of one user is typical of the experience of many who switch to

SURETY
SURESEAL
INDUSTRIAL GLOVES

Because Sureseal synthetic has highest resistance to practically all industrial chemicals . . . plus 4 times greater snag resistance and 10 times greater abrasion resistance, you can expect similar greatly increased service on your tough-on-gloves jobs.

For all the facts — send for new SURESEAL Bulletin.

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Carrollton, Ohio

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(For details, use Key # K-34 on card on page 85)

"Fire-Chief Finished"
WELDING CURTAINS—SALVAGE COVERS

to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

A. Smith & Son Inc.
Established Eighteen Hundred Sixty-Seven
MANUFACTURERS OF REEVES STRETCHER
Ridge Ave. at Green — Philadelphia 23

"If It's Made of Canvas, We Make It"

(For details, use Key # K-35 on card on page 85)

should be poured directly into the eyes or over the skin. Packaged in four-ounce, unbreakable Polyethylene bottles, with special spray tops, four bottles of Neutralize are included in each Bullard Anhydrous Ammonia First Aid Kit.

In addition, there are eleven unit First Aid packs containing such things as gauze pads and absorbent compresses, scissors, eye dressing equipment. Complete instructions for first aid treatment are included.

For details, use **Key # FA-14** on Inquiry Card on page 85.

AEROSOL BURN KIT

A complete kit for the fast, effective first aid treatment of burns is offered by Mine Safety Appliances Co. The antiseptic, analgesic "Foille" can be applied quickly and painlessly to the affected area from the aerosol spray dispensers. The metal kit contains 4 spray dispensers, 6 tubes of Foille ointment, and packaged units of compresses, bandages, gauze pads, muslin, triangular bandages, along with ammonia inhalants, castor oil tubes, safety pins and scissors.

For details, use **Key # FA-15** on Inquiry Card on page 85.

ANTISEPTIC CLEANER

To eliminate the need for separate products to meet germicidal, fungicidal, deodorizing and antiseptic-cleansing needs in first aid, "Bactine" curbs infection and promotes healing by killing bacteria on contact. Developed by Miles Laboratories, Inc., it is useful on cuts, burns, scratches and abrasions, and its prolonged antibacterial activity is said to protect for hours against recontamination and deep-seated bacteria.

Bactine penetrates into the

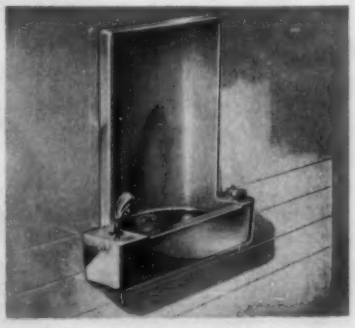
smallest cracks and crevices of the skin because of its low surface tension. It quickly soothes, relieves pain, and combats potential infection by stopping the urge to scratch. The manufacturer claims that it produces rapid and prolonged asepsis of hands superior to that of a standard surgical scrub. The germicidal action is not abolished by water, blood or body secretions.

It is not a "primary" (or allergen) skin irritant. When used according to directions, it is virtually non-sensitizing and non-toxic on intact or denuded skin. As a true deodorizer, it eliminates odors and leaves a fresh, clean aroma. A clear, colorless solution, it will not stain skin or clothing. Bactine is available in two forms—standard and concentrated.

For details, use **Key # FA-16** on Inquiry Card on page 85.

WALL FOUNTAIN

Haws Drinking Faucet Company has announced a new semi-recessed wall fountain in 18 gauge, type 304, stainless steel, No. 4 finish, with drinking faucet head and operating lever conveniently located on opposite sides of a smartly-designed platform. This Model No. 73 is a handsome, general drinking water facility for public and office buildings, schools, hospitals and restaurants, etc. An



access panel in the wall is not required, although provision for the trap must be made in or behind the wall. All fittings are accessible from under the bowl. The semi-recessed design requires it to take up very little space in room or corridor.

For details, use **Key # FA-17** on Inquiry Card on page 85.

MEDICATION FOR CHEMICAL BURNS

A new product, called "Neutralize," has been introduced by the E. D. Bullard Company, which may be used to counteract both acid and alkali burns to the eyes or skin. The product is simply poured into the eyes or over the skin to render the chemical neutral, and therefore, harmless. It is said to counteract both acids and alkalies without inducing new complications.

"Neutralize" has a pH of 7. Because it is neutral in action, it can be employed safely in high concentrations. It is available in 4- and 32-ounce Polyethylene bottles.

For details, use **Key # FA-18** on Inquiry Card on page 85.

INJURED-FOOT SHOE

The wooden-sole orthopedic shoe made by Reece Wooden Sole Shoe Co. has an airform inner sole for added comfort. The shoe provides protection and comfort after many types of foot injuries: broken toes or foot bones, burns, bursitis, sprains, severe athlete's foot, etc. The firm but lightweight canvas uppers are adjustable to any size bandage. The wooden sole acts as a splint on the bottom of the foot and in some cases eliminates the need for a cast. The corrugated metal guard to prevent further injury is optional. The shoe can be worn on either foot and is available in three sizes.

For details, use **Key # FA-19** on Inquiry Card on page 85.

Industrial Diseases

A recently published reference book, "The Diseases of Occupations," reviews comprehensively and with emphasis on its clinical aspects the problem of disease in relation to occupation. Written by Donald Hunter, M.D., F.R.C.P., Physician at the London Hospital, the informative book outlines the development of industrial disease prevention and also gives practical information on health-endangering conditions encountered in industry.

Dr. Hunter offers detailed descriptions of various jobs and indicates the type of questions medical personnel should ask patients in taking case histories. The general sections of the 1046-page book cover: Man & His Work, The Industrial Revolution, 19th Century Social Reforms, Worker Health in the 20th Century, Ancient Metals, Other Metals, Newer Metals, Aromatic Carbon Compounds, Aliphatic Carbon Compounds, Noxious Gases, Diseases Due to Infections, Diseases of the Skin & Occupational Cancer, Diseases Due to Physical Agents, Pneumoconioses, Accidents. The volume is profusely illustrated and is available for $20 from Little, Brown & Co., 34 Beacon St., Boston 6, Mass.

Noise Bibliography

This bibliography is intended as a useful reference for physicians, engineers, executives and others who may be concerned with problems resulting from excessive noise. Its preparation by Industrial Hygiene Foundation was prompted by the need for a systematic survey of the voluminous literature on the subject in order to supply a basis for a proper approach to an understanding of the problem of noise and its solution. Entitled "An Annoted Bibliography on Noise, Its Measurement, Effects and Control," the 2,336 references are arranged chronologically for greater ease in locating a particular subject and for purposes of historical background. Material is indexed by both subject and author. No attempt is made at critical evaluation.

The bibliography is available for $7.50 from the Industrial Hygiene Foundation, 4400 5th Ave., Pittsburgh 13, Pa.

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Eyeguard Prescription Safety Glasses offer you—

★ **Absolute conformance to prescription**
★ **Top quality Bausch & Lomb materials**
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★ **Lens saving TUF-COTE available**

Expertly ground and hardened, Wallace Eyeguard prescription safety glasses answer the need for a prescription service that is fast and accurate. Our complete line of approved acetate and metal spectacle frames will satisfy every demand. Send for price list and frame catalog.

Welders and grinders can enjoy much longer service from their prescription safety glasses if the lenses are protected with TUF-COTE. This crystal-clear treatment forms a barrier against the pitting action of burning fragments of metal in welding and grinding operations. Lenses last 7 to 15 times longer with TUF-COTE.

WALLACE OPTICAL CO., Inc.
1025 BRUSH STREET DETROIT 26, MICHIGAN

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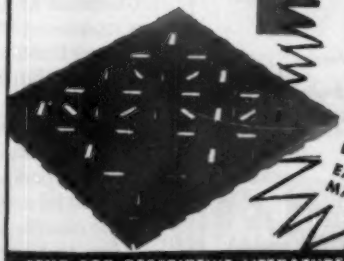
NOW!

AN IMMACULATE **LOW PRICED** STEEL FLOOR THAT IS **SAFE!**



ANCORETTE STEEL FLOOR PLATES

WITH ITS (33) SAFETY ISLANDS THAT CHECK THE SLIGHTEST TENDENCY TO SLIP OR SKID

(33) TONGUES ANCHORED IN OPPOSING DIRECTIONS IN FRESH CONCRETE TO INSURE IMMOBILITY AND SECURITY OF THE PLATE

TOUGH, HOT ROLLED, DIE CUT STEEL NEVER WARPS, BREAKS OR SHOWS WEAR UNDER TRAFFIC OR PRODUCTION

EASILY INSTALLED BY YOUR OWN MAINTENANCE MEN

SEND FOR DESCRIPTIVE LITERATURE . . .

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121 N. BROAD ST., ROOM 806 · PHILADELPHIA 7, PENNA.

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Powdered Soap
Liquid Soap
EVERY TYPE OF SKIN CLEANSER
Bar Soap
Lightfoot
manufactures all three from raw material to finished product!

A Specialized Soap to Meet Every Type of Plant Requirement!

Whether for light, heavy or extra heavy duty, for general plant or office use, or to solve specific cleansing problems, our more than 40 years of experience in serving industry is at your service. *Your inquiries will receive prompt and intelligent attention!*

LIGHTFOOT SCHULTZ COMPANY
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(For details, use Key # K-38 on card on page 85)

HI! I'M DAVE!

I'LL BE LOOKING FOR YOU AT THE NATIONAL SAFETY SHOW! WE'RE AT BOOTH 310.

Look for this Goliath display. The leather-faced asbestos mitt I'm wearing is only one of our more than 250 Fine Work Glove styles you'll see there!

DAVID'S GLOVES, Inc.
"Goliath of the Work Glove Field"
SPRINGFIELD, OHIO

(For details, use Key # K-39 on card on page 85)

Keeping It Clean

Keeping office buildings clean and pleasant, as well as other places of employment, is the purpose of a new American Standard. Approved and designated Z4.1-1955 by the American Standards Association, the standard precribes minimum sanitary requirements for the protection of employees' health. It covers, primarily, drinking water, washing and toilet facilities, rest and change rooms.

The project was sponsored by the U. S. Public Health Service. Copies of the American Standard Minimum Requirements for Sanitation in Places of Employment, Z4.1-1955, may be obtained from the American Standards Association, 70 East 45 Street, New York 17, at 50 cents per copy.

Industrial Hygiene Courses

In conjunction with its industrial hygiene program, the Institute of Industrial Medicine announces a group of courses dealing with environmental hazards. These courses should be of particular interest to industrial hygienists, industrial physicians, insurance representatives, safety engineers and others in the field of occupational health and safety. Although some courses in the program are already underway, the following courses are set for future dates at New York University Post-Graduate Medical School.

Industrial Hygiene: An evening course of 15 weekly sessions, beginning in Feb. 1956, consisting of lectures and demonstrations on the engineering control of occupational disease. Tuition: $66.

Air Pollution: A two-week intensive course, November 28–December 9, 1955, dealing with the techniques of sampling and measurement and control of atmospheric pollutants. Tuition: $60.

Introduction to Radiological Safety: A two-week course from January 9–20, 1956 with an optional two-week laboratory session through February 3. To be repeated again as an evening course of 15 weekly sessions (including laboratory) beginning in February 1956. The course covers the theory of detection and measurement of radiation; maximum permissible exposures to radiation; uses of radiation in industry, research and medicine; and principles of radiological safety. The laboratory session will be devoted to radiation detection and measurement, personnel monitoring, and the use of radiological survey instruments. Tuition: Lecture—$60. Laboratory—$60.

Chemical Methods in Industrial Hygiene: A laboratory course of 15 weekly evening sessions starting in February 1956, dealing with the chemical determination and definition of occupational hazards. Tuition: $66. Laboratory fee: $15.

Special Laboratory Methods: This course will provide guidance and laboratory facilities for individuals who have specific problems in industrial hygiene. Students will be accepted on the basis of their background and the complexity of their analytical problems. Hours and fees to be arranged on an individual basis.

For further information and application, address: Office of the Dean, Post-Graduate Medical School, 550 1st Ave., New York 16, N. Y.

Treatment of Burns

by J. D. DENNEY, M.D.
Columbia, Pa.

ategory of industrial accidents, one of the equent types is the burn. And perhaps no dent type presents as true an emergency does the major burn. Immediate treatment per character, in burns involving large areas urface, is most essential, and in a great per- these cases is the factor upon which survival nd.

s perhaps no type of industry totally free ype of injury. Leading the industrial groups ncy of occurrence are: the heavy metals in- the petroleum and derivatives production ss, plastic and chemical works. All industry, shares to a degree in this type of injury.

f burns vary in the degree of tissue damage. oughly classify industrial burns into five gen- s: 1. The molten-metal splash burn; 2. The type caused by contact with hot water or The chemical burn; 4. The electric burns; 5. tion burn (the type of tissue damage caused re to radioactive substances, X-ray, radium elements). Each presents in its turn rather d different characteristics requiring, how- general way, fairly similar forms of emer- atment.

amage to the human body may be summed w simple subdivisions: 1. The systemic dam- ck; 2. The problem of the severe pain and ; 3. The sequel of secondary infection and oxemia; 4. The resulting alteration of surface ith scarring or contracture.

t two of these groups are of most concern to management, for these items are matters of y. With prompt action for their control can often be prevented. The third item in- original handling of the case to a somewhat gree, but well informed first aid personnel uch to forestall this unhappy complication.

roduce fatal results from perhaps four major . Initial shock; 2. Secondary infection; 3. tus due to damage to excretory function; 4. of fluid and electrolyte balance in the blood. roup of accidents is an informed personnel of alue than in the wide field of the industrial would be wise for any plant manager, no w small the employee group, to have some t physician or surgeon brief first aid teams epted and somewhat standard procedure for gency treatment of burns. Inadequate or mis- eatment may shift the balance between re- fatality. In no type of case, except perhaps assive hemorrhage, is the emergency more nd the need for professional attention more

xperience covering some thirty-five years we the immediate covering of the burned area and oil, sprayed from some type of pressure

SAFE, EFFICIENT INDUSTRIAL CLEANING COSTS LESS---WITH NEW BENNETT UNIVERSAL AIR-OPERATED CLEANER!

The Bennett cleaner is safe because it is completely non-electrical. There is no danger from sparking, because there are no running parts.

The Bennett cleaner saves time and money! It's light and highly portable. Cleans walls, shelves, beams, storage bins and other out-of-the-way surfaces with a minimum of labor!

Powerful suction developed by compressed air (approximately 90 lbs. pressure) . . . adequate for all industrial applications. Highly efficient WET or DRY pickup.

Adaptable to any industrial application! Picks up metal chips, glass particles, etc. Interchanging bag with hose permits removal of liquids from any normal surface or tank.

Special fittings and brushes make the new Bennett cleaner adaptable to any industrial application. Interchanging bag with hose makes it adaptable for removal of liquids from any normal surface or tank.

NO ELECTRICAL CONNECTIONS NECESSARY!

NO MOVING PARTS! Unlimited life . . . no danger from sparking.

COMPACT—POWERFUL! Highly efficient WET or DRY pick-up.

LIGHT—PORTABLE! Body of aluminum casting.

EASY TO OPERATE! Designed to reduce operator fatigue. Hand-operated metering valve.

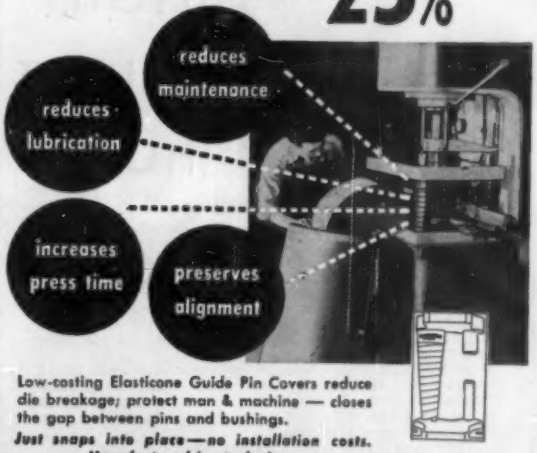
COMPLETE UNIT WITH 5" ALUMINUM NOZZLE, AND BAG $29.95

M-M-A, Inc., Lancaster, Pa.

(For details, use Key # K-40 on card on page 85)

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%



Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.

Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

CENTRAL

MARSDEN and MAGEE AVES. PHILA. 35, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

(For details, use Key # K-41 on card on page 85)

BABCOCK

Ladders

DESIGNED *for* **SAFETY**

Extensions
Singles
Stepladders

Built for safety and service. Industrial ladders of *Top-Quality* material and workmanship.

Underwriter's Approved

BE SURE BE SAFE BUY BABCOCK

The W. W. BABCOCK CO., Inc. · BATH, N. Y.

(For details, use Key # K-42 on card on page 85)

Completely New

LIGHT WEIGHT HOOD

WAGCO PRODUCTS for over a decade manufacturers of fine quality spray, vapor and dust hoods, are now proud to offer you this completely new Light Weight Hood, the only hood with headgear weighing only 7½ ounces with adjustable headgear to fit all head sizes with minimum adjustment. Air supply line has noiseless air intake. Air is filtered through ⅝" of wool felt which removes air line noises, odors, and moisture.

The Hoods are made of either clear cast vinyl plastic for unlimited vision and light, or yellow rubber coated cloth which is easily seen in areas where visibility is cut to a minimum. Both are tough and long wearing.

The complete unit, including our new light weight adjustable headgear, noise free filtered air intake, air supply line and two Hoods, (one is clear cast vinyl plastic, the other our yellow rubber coated cloth), sells for $9.95.

See your safety equipment dealer or write for name of nearest supplier.

WAGCO PRODUCTS INC.
"The Name Of Safety"

11274 Allen Road Dearborn, Mich.

(For details, use Key # K-43 on card on page 85)

sprayer is an imperative first step in the reduction of pain, and prevention as much as possible of the supervening shock. Narcotic sedation must be obtained as soon as available, and limitation of handling of the seriously burned patient recommended. Details of further treatment of course come within the field of the attendant physician.

Reviewing some three decades of experience in emergency treatment for the immediate relief of pain of the recently burned employee, I have run the gamut of a multitude of procedures, varying in type and mode of application. In our own experience, we have come to the conclusion that the early and complete spray application of a protective bland oil to cover thoroughly the freshly burned surface is a major and important step in treatment procedure. We have used a sterile combination of lanolin, olive oil, cod liver oil, and oil of caraway, with salol added, which has proved to be a most effective analgesic and sedative dressing with excellent final results in regard to ultimate healing time.

We cannot stress sufficiently the importance of a number of adequately trained and informed personnel in any industry where burns are a major type of injury to be anticipated. The proper care in the first half hour following the burn is of truly major importance and can be carried out properly by nurses or even nonprofessional individuals, to whom details of accepted and recommended treatment procedure have been explained and outlined.

Noise Conference

The latest information on several current noise problems will be presented at the sixth annual National Noise Abatement Symposium to be held Thursday and Friday, Oct. 20 and 21, at Armour Research Foundation of Illinois Institute of Technology, Chicago.

Three sessions will be held during the symposium: 1. Noise in Industry (Case Histories)—Description of the problem, What was done to solve it, The results; 2. Impact Noises—Practical reduction of impact noises, Instrumentation for the measurement and analysis of such noises; 3. Novel Methods of Noise Reduction—A series of papers on situations where noise reduction was obtained without the use of the usual acoustical materials.

Rescue and First Aid Convention

Alexandria, Virginia, will be the scene of the Eighth Annual Convention of the International Rescue and First Aid Association October 27, 28 and 29.

IRFAA President Phillip O. Rhynas, of Toronto, Canada, will preside at the convention sessions which will be held in the Alexandria Roller Skating Arena where part of the spacious floor will be devoted to exhibits of rescue, first aid and other equipment. Mobile equipment will also be exhibited indoors.

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WHEN to use them...
HOW to use them...
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(For details, use Key # K-44 on card on page 85)

BEFORE

AFTER

STARTLING RESULTS FROM SALCOLAN

A SOOTHING, PROTECTIVE AND REPARATIVE APPLICATION FOR BURNS, SCALDS AND ABRASIONS

"Rapid release from pain, early recuperation of damaged tissues, almost complete elimination of secondary infection, freedom from scarring."
—FROM A HOSPITAL REPORT

These results led this institution to *discard every other product* from its armanentarium. SALCOLAN is in wide use among industrial plants throughout the country and is highly recommended by industrial medical men.

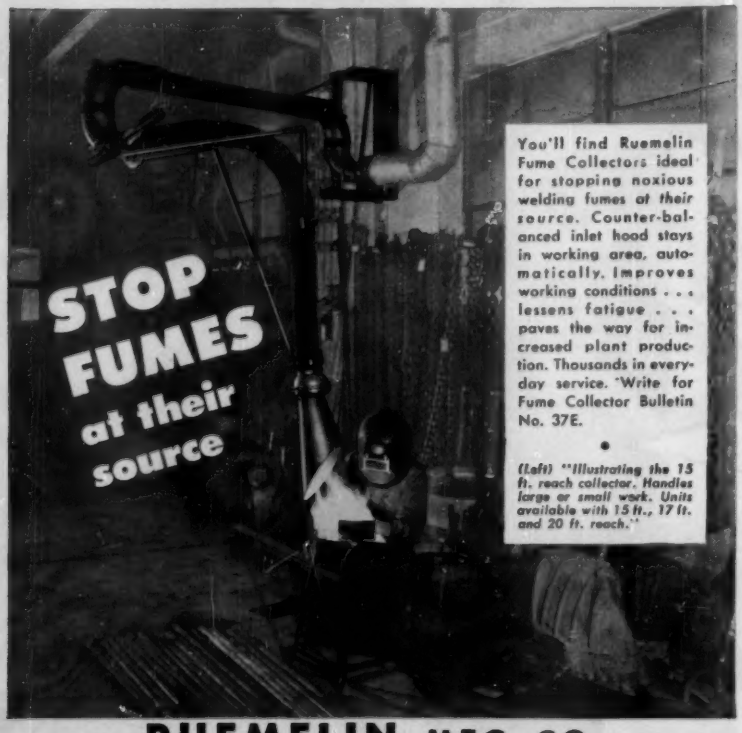
AVAILABLE IN TWO-OUNCE TO ONE-GALLON BOTTLES. REFILLABLE STAINLESS STEEL SPRAY DISPENSERS CAN BE FURNISHED ON REQUEST.

CHECK THESE ADVANTAGES OF SALCOLAN

1) Non-toxic and harmless to the mouth and tissues of the body
2) Gives instant, cooling relief
3) Inhibits infection
4) Preserves viable cells
5) Prevents formation of necrotic material
6) Stimulates granulation and epithelization
7) Reduces scarring

R & P PRODUCTS, Inc.
129 SOUTH FOURTH STREET
COLUMBIA, PENNSYLVANIA

(For details, use Key # K-45 on card on page 85)



You'll find Ruemelin Fume Collectors ideal for stopping noxious welding fumes *at their source*. Counter-balanced inlet hood stays in working area, automatically. Improves working conditions . . . lessens fatigue . . . paves the way for increased plant production. Thousands in everyday service. Write for Fume Collector Bulletin No. 37E.

•

(Left) "Illustrating the 15 ft. reach collector. Handles large or small work. Units available with 15 ft., 17 ft. and 20 ft. reach."

RUEMELIN MFG. CO.
MFRS. & ENGRS. • SAND BLAST & DUST COLLECTING EQUIPMENT
3892 NORTH PALMER STREET • MILWAUKEE 12, WISCONSIN, U. S. A.

(For details, use Key # K-46 on card on page 85)

Waterworks Injuries

This report contains a detailed analysis of the frequency, severity, and kinds of injuries experienced in the operation of waterworks. Included in Report No. 83: "Injuries & Injury Rates in Water-Supply Utilities, 1953" are analyses of: 1. Injury rates by: a. Class of ownership, b. Establishment size, c. Geographic areas and states, d. Operating departments; 2. Nature of injuries and parts of body affected.

This report may be obtained free of charge by directing your request to the Bureau of Labor Statistics, U. S. Dept. of Labor, Washington 25, D. C.

Engineering Materials

The materials of manufacturing and construction in all branches of engineering are brought together for centralized identification and working comparison in "Handbook of Engineering Materials." The new source book has been edited by Douglas F. Miner and John B. Seastone, and represents the combined resources of 51 specialists from numerous fields.

The increasing tendency for one branch of engineering to overlap with another provided the basic need and impetus for this exhaustive reference work. Here, the technical properties take precedence, with emphasis on selection and use of material, adaptability to fabricating methods, availability, costs, and limitations.

Arranged by classes of related or similar materials, the first section provides general information on specifications and standards, statistics in the application of materials, and mathematical and physical tables. The second section is devoted to metals.

Details for non-metals are given in the third section. Wood and wood-base materials, paper, fibers, plastics and rubbers, organic finishing materials, fuels, carbon products, ceramic materials, industrial chemicals, and lubricants are the individual materials treated here.

Construction materials are covered in the final section, with the

analysis directed to cementing materials and concretes, roadbed materials, timber, rope, foundations, weather and moisture protection, and glass products.

The 1382-page handbook is available at $17.50 from John Wiley & Sons, Inc., 440 4th Ave., New York 16, N. Y.

Packaging Materials

This booklet is a compilation of papers presented at the American Management Association Packaging Conference held in Chicago in April, 1955. Eighteen papers describe a wide variety of packaging materials, some of them quite new. The materials discussed include: Aluminum Foil, Glassine and Greaseproof Papers, Label and Box-Wrap Papers, Boxboard, Acetate, Cellophane, Polyethylene, Saran, High-Impact Polystyrene, Rubber Hydrochloride (Pliofilm), Vinyls, Polyester (Mylar), Expanded Plastics—Phenolics, Expanded Polystyrene, Expandable Polystyrene, Vinyl Foam and Sponge, and Urethane Foams.

Most papers include descriptions of make-up and manufacturing processes and a presentation of outstanding properties and typical applications of these materials. Requests for copies should be sent to Publications Sales Dept. P., American Management Association, 330 W. 42nd St., New York 36, N. Y. The cost is $1.75 ($1.00 to AMA members).

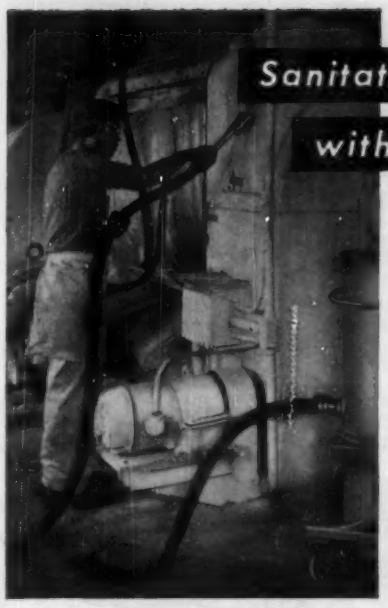
Young Workers and Paper-Products Machines

Bulletin No. 181, "The Operation of Paper-Products Machines," is a report of an investigation made under the child-labor provisions of the Fair Labor Standards Act to determine what occupations in the operation of paper-products machines are particularly hazardous for the employment of minors. Its conclusions are the basis under which the Secretary of Labor issued Hazardous-Occupations Order No. 12, establishing an 18-year age minimum for the operation of some of the machines. The text of the Order is given in the appendix.

The bulletin covers the hazards of work associated with the operation of machines used to re-manufacture paper or pulp into an end product such as paper boxes, stationery, printed materials, etc. The report does not include a study of the hazards of the manufacture of paper or pulp, nor does it include nonmachine operations in a paper-products plant.

The report points out that there are many different types or kinds of machines used in the converted paper-products industries—many of which are production machines used for a special purpose. Of all of the machines, only a relatively small number are found to be particularly hazardous. The operation of the hazardous machines is discussed in detail, their hazards analyzed, and substantiating evidence of hazard from statistical data presented.

Single copies from the limited free supply of this bulletin are available from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Sales copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 20 cents.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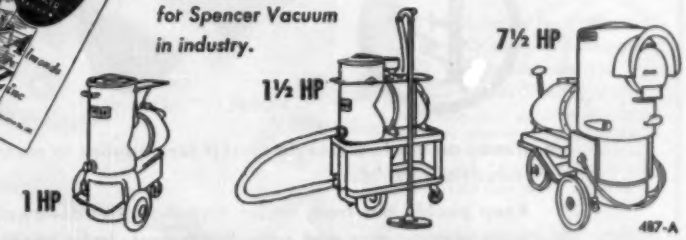
Take the job of handling hot materials, removing fly ash, picking up spilled liquids or handling fine chemical powders. Consider the time saved, the comfort and safety involved when these tasks are done with Spencer Vacuum.

Then consider that these Spencer machines will clean your plant and your machines at night—faster and at lower cost. That you can reclaim foods, chemicals, and metals, can speed up the assembly and inspection lines—in fact you can be sure that not only your plant, but your finished products are always clean.

Spencer representatives have special information on more than 100 special applications that can improve your plant sanitation and increase production.

Send for Bulletin No. 144 describing 132 unusual uses for Spencer Vacuum in industry.



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(For details, use Key # K-47 on card on page 85)

Respirators

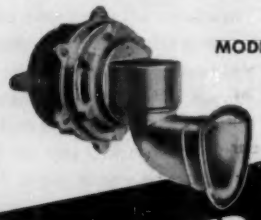
(Continued from page 38)

The acceptance of personal respiratory protection for the situations that may produce occupational diseases has varied greatly, and in some instances conflicted. On one extreme, there are many verified worker requests, even demands, for respirators because the men understood the hazards of their occupation and desired to protect their health. In other situations, workmen have requested respirators for protection from nuisance dusts primarily to avoid discomfort. In general, there has been no difficulty in getting workers to adopt this protection where there is a need, where the proper equipment has been procured, and its use intelligently supervised.

On the other hand, there have been reports of situations where workmen have been indifferent and even opposed to the use of respirators. If compelled to wear them by administrative order, they do so properly only when under very strict supervision. When the supervisor's back is turned the workmen render the devices ineffective by improper assembly, taking out exhalation valves, destruction of filters, and adjustment to make a loose fit around the facepiece. Since these attitudes sometimes show up in the same kind of industrial operations that other plants, with good experience with respirators conduct, it seems that the difference is due to management, employees, conditions of work, or the type and quality of equipment provided. Usually a lack of supervision and failure of the employer to convince the employee that protection is needed cause the trouble. It is rather significant that persons who procure and pay for respirators for their own personal protection seldom find difficulty in using them.

In a survey of objections to respirators, made by a large industry, a wide variety of dislikes were revealed. Some employees, especially women, do not like the disfiguring appearance. This objection is usually overcome by convincing an employee that a respirator is necessary to protect his health. It is good practice to insist that everyone who works in or enters a department where respirators are generally required, also wear a respirator. This should include foremen, supervisors, and even visitors.

Some workers object to respirators because they feel that breathing is more difficult. For persons with asthmatic conditions or those who have some lung disablement from present or past infections, and for normal persons at high altitudes, there is a basis of fact in their objection, especially if they must wear respirators with high resistance to breathing. In most instances, however, in normal individuals, the difficulty of breathing is mainly psychological. When the person puts on the respirator, he unconsciously starts to breathe faster and abandons normal, involuntary, rhythmic respiration. In other words, he forces his breathing. After a little experience, he forgets that he is wearing a respirator, breathes normally again and the discomfort and so-called distress disappears. Instructions in



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MODEL "J" SIREN

It may be a trite old saying but it sure applies to many industrial hazards.

Keep people out from under suspended loads—away from moving cars and open hatchways—keep people away from danger spots and they don't become victims!

Modern audible signals are life savers! They can communicate a danger warning just as easily as they can indicate start and dismissal or call some special person to the phone. They are dollar savers as well as life savers in every phase of industrial or public building operation. Look over your property—see where lack of signals has been letting money run down the drain—if not adding to human misfortune.

FEDERAL has a signal for every purpose—write for literature.

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(For details, use Key # K-48 on card on page 85)

proper breathing habits should be given persons who wear respirators. Failure to replace filters of dust, fume or mist respirators before they have become plugged to the point of high resistance to breathing is another cause of mistaken complaint.

Proper instruction in adjusting the facepiece to obtain a good fit without drawing the head bands so tight that they are uncomfortable, will increase the acceptance of these devices while assuring good protection.

Perhaps the most common reason for disliking respirators is the failure to keep them clean. While a workman may not always let it be known, it is certainly revolting to anyone to place on his face a device that is not only dirty and contaminated with the materials to which he is exposed, but especially dirty from sweat, grease, and bacteria from the face, nose and mouth of either himself or another workman. Aside from creating a dislike for the respirator, failure to keep them clean and sterilized spreads infection or promotes reinfection. A respirator is a very personal device. Exchanging them without cleaning and sterilizing is a far worse practice than using the other fellow's tooth-brush or using a "common drinking cup."

No matter how good an original respirator inspection, it will be of little value unless the mask is inspected and maintained in good condition.

Compared to other methods of dust and fume control, respirators are inexpensive. Consequently, sometimes little thought is given their maintenance. Too frequently good respirators are purchased, distributed carefully, and then forgotten. In a short time, they are very dirty and function badly, if at all.

It is important that respirators be maintained in good working condition. Any respirator which is not will soon become very dirty and ineffective. A worker will object to wearing a dirty or unsightly respirator. Furthermore, if the respirator is not properly maintained, it will soon become defective and will not protect even if worn correctly and continuously. A defective respirator is worse than none because the wearer is given a false feeling of security, and will not take the precautions which he would take if he had no respirator.

There are two general systems of respirator maintenance today. They are, (1) individual maintenance, and (2), central maintenance. In the individual maintenance system, the care and upkeep of the respirator is left to the user. He is supposed to wash, sterilize and repair the respirator. In the central maintenance system, all respirators are assembled at one central point for cleaning and repairing.

Usually the central maintenance system is worked out somewhat as follows. Each worker who needs respiratory protection is supplied with two respirators. The respirators are marked with the employment number of the user. Respirators may be marked by stamping the number on metal parts, riveting metal number plates on the rubber masks, and sewing laundry tabs on the headbands. When he goes to work in the morning, the worker passes by a row of pigeon

CLEANING PARTS WITH INFLAMMABLE LIQUIDS CAN CAUSE DISASTROUS FIRES!

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CLEAN PARTS 3 WAYS—SAFELY!

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Adapted for Critical Cleaning of Automatic Transmissions and Power Steering Units

A continuous flow pump strains, filters and ejects abrasive foreign material and returns clean Kleer-Flo Hi T Degreasol or M-467 Cleaning Fluids through the semi-rigid hose to the upper soaking tank.

Fire hazard is reduced by a quick action fusible link in self-closing cover.

Efficient patented electric pump is driven by a fan-cooled brushless, sparkless motor.

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holes in one of which (indicated by his employment number) he finds a clean and well-kept respirator. At the close of the shift, he places the dirty respirator in the pigeon hole. The dirty respirators are all collected by one man who cleans and repairs them in a room laid out for this purpose.

One respirator per worker is sufficient if the maintenance is carried out between shifts. Usually, however, two respirators are supplied and repairs and cleaning done by one man on the regular shift. The worker in charge of the respirator maintenance need not be a new or special worker. It may be the man in charge of the stock room, or any individual who has time to do the job. Frequently, the maintenance of respirators can be combined with that of other protective equipment such as goggles and protective hats. In some industries where relatively few respirators are in use, the maintenance is one of the duties of the nurse.

The advantages of the central over the individual system are obvious. Each worker has a clean, well-kept respirator daily. He will object less to wearing it, and will get real protection at all times. The saving from the increased life of parts and decreased need for new respirators will usually more than offset the additional cost (if any) of setting up the central system.

The idea of a central maintenance bureau is not a new one. Such bureaus have been in use in a score or more industries for several years. The results produced, as evidenced by the condition of the respirators and the apparent satisfaction of the users are remarkable.

Respirator maintenance usually consists of cleaning, sanitizing and repairing. Effective methods of cleaning and sterilization are:

Cleaning:

Wash with a brush and soap in warm water.

Sanitizing:

(1) Immerse for ten minutes in a solution of formalin made by placing 1 part of 40 percent formaldehyde solution into 9 parts of water.

(2) Dip in a 3 percent solution of carbolic acid, a 2 percent solution of lysol, or a 70 percent solution of denatured alcohol.

(3) Subjecting the respirator to sterilization by a moist atmosphere of antiseptic gas, preferably formaldehyde, for a period of ten minutes at room temperature.

After following any one of the outlined procedures, the respirator should be rinsed with water and hung up to dry. The filters, felt screens and head bands (if elastic) must be removed before cleaning or sanitizing the respirator.

Many dust respirators employ so-called "long life" filters which are intended to be used over and over. Such filters are cleaned by blowing the dirt or dust off with compressed air; by brushing the surface; or by tapping the filter. If the filters are moist, they must be dried before the dust can be removed effectively. To remove grease and the like, the filter may be dipped in a dry cleaning solution for a very short time. This process should be carried out only infrequently because it decreases the life of the filter.

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MODERN UNIT TYPE FIRST AID EQUIPMENT FOR EVERY EMERGENCY

'PAC-KIT' provides standard products packed in individual cartons with illustrated First Aid Instructions.

Electrically welded 20 gauge steel, dust and moistureproof cases provide complete protection of contents and long service.

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1 Curved Rubber Suction Cup
1 Large Rubber Suction Cup
3 Iodine Applicators
3 Ammonia Inhalants
3 Adhesive Bandages

Wt. complete in metal case, 7 ozs.

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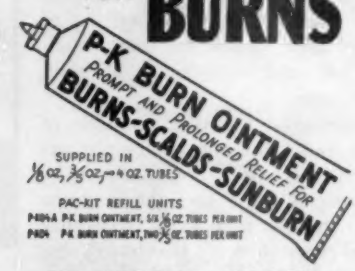

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Scalds — Sunburn — Windburn

P-K BURN OINTMENT provides immediate and sustained relief. It is a soft Lanoline base cream with an effective analgesic.

Liberal free sample on request.

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Ask for a free sample of P-K BURN OINTMENT—The Improved First Aid for Burns

FIRST AID 'PAC-KIT' TRADE-MARK EQUIPMENT

THE PAC-KIT COMPANY
P. O. BOX 1306 GREENWICH, CONN.

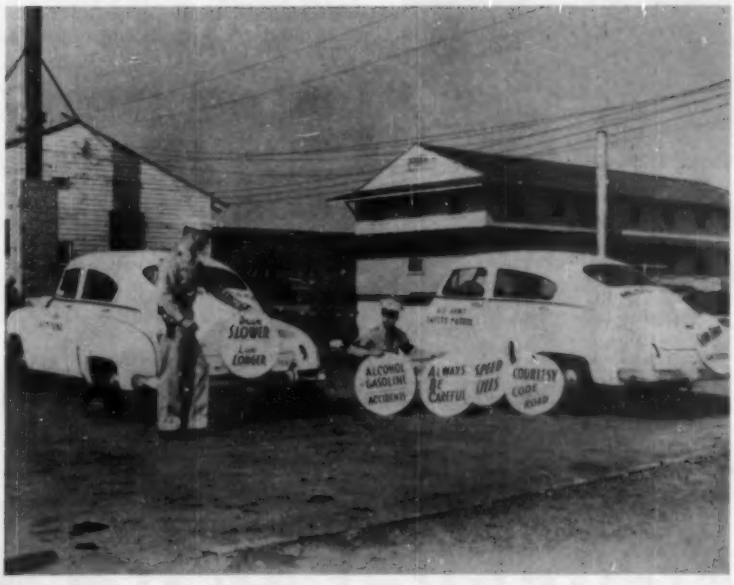
(For details, use Key # K-50 on card on page 85)

transportation safety

Safety Patrol Cars Face Army Traffic Problems

Three First Army installations now have motorized safety patrol cars in operation 24 hours a day. Driven by military police, they are being used in liaison and coordination with civil law enforcement and safety agencies. Their chief function is to patrol problem areas, designated by each installation, supervise Army motor vehicle traffic and warn operators of such vehicles of unsafe driving practices.

Four patrol cars have been assigned to Camp Drum, N. Y. (one of which is shown here), three to Fort Devens, Mass., and four to Fort Dix, N. J. These First Army posts have the highest concentrations of Army personnel.



PORTABLE SAFETY GATE

Simplicity and handling ease are featured in this portable folding gate for use by police cruiser crews, highway patrols, sheriff department and highway construction groups. The gate is designed for use at the scene of an accident, around excavations, as a road block or barricade.

Its manufacturer points out that this safety barrier can extend to any length needed up to 8 feet. Completely self-contained, self-standing, the barrier measures only 8¾ inches by 36 inches when folded. The unit weighs a little more than 15 pounds and can be easily carried on the back shelf or in the trunk of a car. With no parts to assemble, screw or fit together, it is always ready to give protection.

The unit is strongly built and is painted in yellow and black, hard-wearing lacquer. With it on the job there is no time wasted and no need to haul in heavy planing or barricade lumber. The unit can go up in less than 20 seconds.

For complete details use Key # TS-19 on inquiry card on page 85.

Highway Safety Habit

"Highway safety is a way of life. You have to learn what it takes to be safe on the highways, and then you have to practice what you've learned until it becomes a habit."

This is how Dan Dugan describes highway safety. And he ought to know. His oil transport company in Sioux Falls, South Dakota, has won the Trailmobile Tank Truck Trophy four times in the past six years—plus twenty-six other major national safety awards.

Dan Dugan puts his safety theories in practice, he says, through the constant practice of "aggressive caution." By "aggressive caution" he means: 1. Careful selection of drivers; 2. Careful coaching of drivers and supervisors to create understanding of what safety means; 3. Constant maintenance of equipment; 4. High standards for defensive driving practices; 5. Constant supervision to see that high standards become habits; 6. Recognition of the importance of courtesy.

Courtesy on the highways is a major factor in his safety program. More than 300 letters a year come to his headquarters from motorists that his drivers have aided on the highway—from fixing flat tires to saving lives in highway accidents. Many of the drivers are fully trained in Red Cross First Aid. Their truck-trailers are designated as Red Cross emergency units and carry full equipment for emergency aid.

One Dugan driver has kept himself busy with a variety of courtesies on the highway that probably never will be equalled. He rescued a would-be suicide from a carbon-monoxide filled car, discovered the whereabouts of a stolen airplane, caught a runaway hog escaped from a farmer's truck, gave first aid at five serious accidents and extinguished a truck fire on the road.

(Continued on the next page)

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Fog-proofs and cleans all Glass and Plastic surfaces . . . instantly!

- KEEPS VISION CLEAR
- GREATER SAFETY AGAINST ACCIDENT
- ENCOURAGES USE OF PROTECTIVE EYE GEAR
- EQUALLY EFFECTIVE AS CLEANER AND ANTIFOG AGENT
- CUTS PRODUCTION TIME LOSSES
- BETTER BY ANY COMPARATIVE TEST

KLEAR-GLASS PAYS FOR ITSELF THE FIRST WEEK ON THE JOB.

WRITE DIRECT for prices and nearest dealer.

PACKED FOR GREATEST CONVENIENCE AS:

Pocket Applicator
for eyeglasses and lenses

Spray Bottles
for windshields and large area surfaces.

Wall Cabinet
for service of eye gear

Pints and Gallons
for bulk needs

The BUCKLEY CORPORATION • 607 Fifth Ave. • New York 17, N. Y.
In Canada: Klear-Glass of Canada, Ltd., 330 Bay St., Toronto

(For details, use Key # K-51 on card on page 85)

GROUND-IN GRIME

REMOVED SAFELY, GENTLY WITH HANDEEZ

Shop grime lurking deep in pores . . . tiny nicks in skin from HARSH cleaning compounds . . . these are factors which may lead to painful, efficiency-reducing dermatitis.

HANDEEZ lifts grime out GENTLY by means of a sterilized vegetable emollient—acts like millions of tiny, soft brushes—leaving the skin smooth and clean. Office as well as shop workers prefer HANDEEZ to other compounds for its gentle yet thorough cleansing action.

For "Extra-heavy-duty" hand cleaning, use

VOLAX

Literature on request, or consult your Dolge Service Man

FOR FREE SANITARY SURVEY OF YOUR PREMISES ASK YOUR DOLGE SERVICE MAN

dependable DOLGE

WESTPORT, CONNECTICUT

(For details, use Key # K-52 on card on page 85)

The courtesy on the highway that the drivers give is often unexpected—people are more accustomed to callousness and drivers in too big a hurry to stop. The letters they write in gratitude show this. Nearly all of the letters tell of money offered the drivers in gratitude and refused. Instead, the drivers leave a card with those they have helped. The card explains the Dan Dugan Safety Program, and has this message on it:

"It's fun to drive like a Dugan driver—with courtesy and consideration for all—the life you save may be your own."

This intensive safety program is good business. A lot of people think so—and not just for truck operators. Dugan management policy requires the application of modern industrial management techniques to the trucking industry, and he has pioneered many of the adaptations necessary to apply such principles to trucking.

More than 4,000 men applied for driving jobs with the company in 1954. Less than one out of 75 were hired—although more qualified. The company cannot use all the top qualified men who apply, but the company tries to leave each applicant with a better understanding of the trucking industry and the importance of highway safety.

The firm believes men "drive as they live," and they check more than over-the-road experience before they accept an applicant for further tests. Applicants must pass written tests of traffic and driving knowledge, intelligence, personality, attitudes and interests. Psycho-Physical tests for vision, steadiness and reaction time must be passed.

Previous experience is checked with past employers, the License Bureau and insurance company records. Fingerprints are checked with the F.B.I. Driving tests include closed course and road tests. The final check is a complete physical examination—and this is repeated at least once each year.

Once an applicant has been accepted, his training period begins. His record shows what he can do and can be taught to do. It shows where his strong and weak points are. These are evaluated carefully to provide the basis for training.

Four driver-trainers provide the on-the-job training of a new man. There is no rule book, no long list

of regulations. A new man is trained to drive safely and courteously until he drives that way by habit. The uniformity of Dugan drivers as a result of this training is so marked that one insurance engineer running checks on more than 50 drivers noted in his report that all but two drivers kept their vehicle "within six inches of the right edge of the lane at all times."

Dugan's safety director, Dick Olson, compares this uniformity to that established among pilots in their flight training. It is his belief that if all drivers could be trained as pilots are trained, it would eliminate 98% of all traffic accidents. And he has very nearly proved it.

A check list of 46 driving actions is used by the driver-trainers to establish 46 safe driving habits. They keep working on each action until it becomes a habit, and after that to be sure it stays a habit. Each driver-trainer turns in a weekly report to his supervisor, and these reports are evaluated and kept on file by Olson. When a weakness in a driver shows up a coaching team takes over to bring the driver back on the track.

Refined petroleum products hauling is a specialized business and it takes specialized equipment to do it. The drivers have to learn all there is to learn about this equipment, and the safety practices that make hauling gasoline as safe as hauling water. Each driver is taught how to inspect his own vehicle, and has the authority to refuse any defective equipment. This rarely happens, because of the company's efficient maintenance program.

A key to the Dugan safety record is defensive driving. This means expecting trouble at all times and driving so you are ready for it whenever it happens. Special records, tests and checks are used to teach defensive driving. Last year the company held 73 safety meetings. Booklets, mailings, posters, bulletin boards, special letters and the company publication stress the importance of safety.

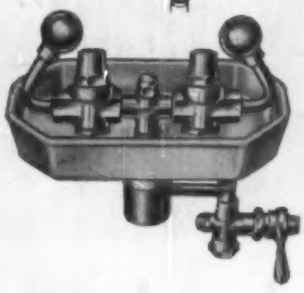
Drivers who violate company standards are spotted by trainers, road patrols and check-in stations. Penalties, when called for, are given in a personal letter to the offender. It may be a warning or a layoff. It is always constructive and an appeal is invited.

THERE'S DANGER IN "TIME"

HAWS EYE-WASH FOUNTAINS

Time elapsing between the accident and arrival of medical aid, is too often a cause of permanent eye injury. Bridge this time gap with a HAWS Emergency Eye-Wash Fountain. Installed at convenient locations, these HAWS safety devices are instantaneously ready when such accidents occur.

The HAWS Eye-Wash Fountain washes injurious chemicals out of the eyes with clean water at controlled pressure and volume. It is also available with Drench Shower Attachment...completing an emergency station for your employees' protection.



Designed and manufactured in cooperation with leading safety engineers

WRITE TODAY for brochure and full details

HAWS DRINKING FAUCET CO.

1439 FOURTH STREET (Since 1909) BERKELEY 10, CALIF.

(For details, use Key # K-53 on card on page 85)

GRATING

Open steel flooring; welded or riveted pattern; fabricated in carbon or stainless steel, aluminum, monel and alloys.

when you specify KLEMP You Eliminate Maintenance Costs and Assure Worker Safety!

HEXTEEL

A steel floor armor designed to prolong the life of floors 5 times! Installed in concrete or mastic on new or existing concrete or wood floors

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Firm_____
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Phone_____

(For details, use Key # K-54 on card on page 85)

The "Normal" Look -by day becomes The "Safe" Look -at Night

FASHIONABLY safe garments that "light up" under auto headlights at night, making pedestrians easier to see, are being introduced nationally this fall.

The garments look the same as any other garment day or night—except when seen from behind car headlights at night. Then they appear to "glow" a bright silver, visible hundreds of feet away. Their secret is a new reflective yarn.

The garments now being made available in stores across the country include boys' jackets, snowsuits and girls' jackets, men's and women's jackets, women's and girls' raincoats and rain hats, and boys' and girls' mittens. There are even specially-styled dog blankets. Knitwear items now being introduced nationally include boys' sports shirts in crew neck and collar styles, boys' socks, and boys' and girls' mittens and caps.

From Gray to Silver

The yarn is gray. In a garment it looks like any other gray yarn, day or night, except when viewed from a car at night. Then it reflects a bright silver directly back to the motorist.

It makes a pedestrian visible at night far beyond the apparent range of headlight beams, the manufacturer reports. A woman in a reflective raincoat, for example, can be seen more than 800 feet away at night with city driving lights, and over 1500 feet away with high-beam highway lights.

Latest figures show that more than 7900 persons were killed and 150 thousand injured as pedestrians in 1954. The majority of the deaths occurred after dark even though far fewer people are out at night. For years safety officials have encouraged nighttime pedestrians to "carry a white newspaper" or "wear something white"—always, necessarily, asking them to do or wear something extra.

The advent of the reflective garments marks the first opportunity to make pedestrians vividly visible at night without changing their style or asking them to carry or wear something extra, the manufacturer points out.

The need for nighttime pedestrian visibility is at least as important for adults as for children, the company continued. The National Safety Council reports that in 1954, 5700 of the pedestrians killed were over 25 years of age; 2200 were under 25.

Garments made with the new reflective yarn can be laundered,

VISIBILITY DISTANCES (In Feet) and *Availabl*

permitted by garments made with new reflective

Available Stopping Time:
The number of seconds it takes for a car traveling at 30 m.p.h. (44 feet per second) to reach the pedestrian after the alerted observer has first seen him.

Conditions of the Test:
1. Alerted observers. (Unalerted observers would see the pedestrian from only half as far away.)
2. Observers recorded the instant they

	Low Beam Headlights				
Garments	**Ordinary Garment Seen at:**	*** Available Stopping Time**	**Reflective Garment Seen at:**	*** Available Stopping Time**	**Ordinary Garment Seen at:**
Snowsuit, matching caps and mittens	100 feet	2.2 seconds	525 feet	11.9 seconds	150 feet
Jacket	185 feet	4.2 seconds	495 feet	11.3 seconds	225 feet
Sport Shorts, Socks	145 feet	3.3 seconds	325 feet	7.4 seconds	220 feet
Rainwear for women	115 feet	2.6 seconds	860 feet	19.5 seconds	240 feet

cleaned and pressed. Two types of yarn are being marketed: Type 100, rayon base, 1200 denier, with 4 thousand running yards to the pound, sold in 2-pound cones; and Type 200, nylon base, 300 denier, 14 thousand running yards to the pound, also sold in 2-pound cones. Both types of yarn enable garments

Stopping Time (In Seconds)

yarn

recognized the reflective pedestrian as a hazard, not when the reflective pedestrian was first seen.

3. Vehicles (passenger cars) were traveling at 30 m.p.h.

High Beam Headlights

* Available Stopping Time	Reflective Garment Seen at:	* Available Stopping Time
3.4 seconds	945 feet	21.5 seconds
5.1 seconds	635 feet	14.4 seconds
5.0 seconds	510 feet	12.1 seconds
5.4 seconds	1,500 feet	34.0 seconds

to be vividly reflective 300 to 1500 feet away at night.

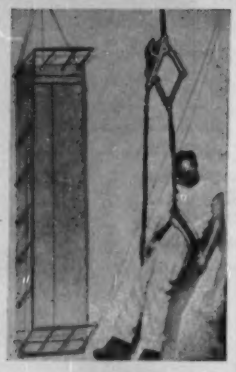
The variety of garments that can be reflectorized "invisibly" with the yarn is almost unlimited, the manufacturer says. Nighttime motorists this fall will see women in reflective rainwear, and men, women and children in reflective sportswear—and in the next few years can expect to see women in reflective dresses, blouses and capes; men in reflective suits, hats and coats; and children in other reflective clothes.

Looks Normal

The company based its prediction on the fact that people need to be seen by motorists at night but don't want to look "different." The yarn gives people the opportunity to look normal day or night—yet to "light up" at a safe distance when seen from a car at night.

Pictures by courtesy of Minnesota Mining and Manufacturing Co.

STOP THAT FALL



Safety Lifeline Lock

FOR SCAFFOLDS AND SWINGS

Locks automatically, instantly. Slips onto lifeline rope. Moveable up or down with man. Instant locking position at all times, whether stationary or being moved up or down.

Snaps into safety belt: No adjusting. Inexpensive. Overall length approx. 13". Does not hurm rope. Weight: approx. 5 lbs.

Recommended for use on standard ¾" or ⅞" Manila rope.

Send for folder

SAFETY TOWER LADDER CO.

1024 BURBANK BLVD. PO BOX 1052

BURBANK, CALIFORNIA

(Use Key # K-55 on Inquiry Card on page 85)

UP FAST— UP TO LAST

BRADY

Self-Sticking

Accident Prevention Signs

Unskilled help puts them up quickly—without nails, screws, or tools. Stick and stay stuck to any surface.

Wordings, colors, sizes, are recommended and approved by ASA and NSC.

Write for Catalog 145-D, free working samples, and name of your distributor.

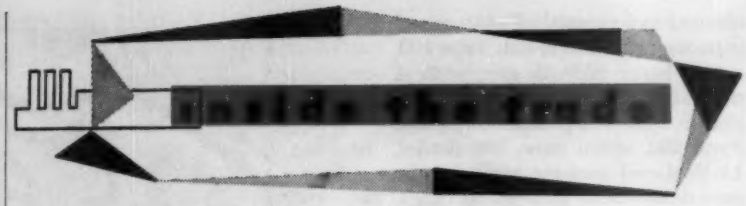
Self-Sticking Warning Stripes

Applied fast — right off the roll. • You get stripes in 2 colors without paint or brush. • All Vinyl Plastic. • Outlasts paint. Write for Bulletin No. 143-A and free working samples.

W. H. BRADY CO.

749 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

(Use Key # K-56 on Inquiry Card on page 85)



Robert T. Scott has been named public relations director for the *FIRE EQUIPMENT MANUFACTURERS' ASSOCIATION, INC.*, according to an announcement by L. W. Shea, Secretary of FEMA. Mr. Scott comes to his new position from the Westinghouse Electric Corporation's Information Services Department.

Among Mr. Scott's duties will be the preparation of educational material on the proper use of the industry's products in first aid fire protection. Mr. Scott will aid in coordinating FEMA's activities contributed by the industry as a Public Service.

Mr. Scott is a native of Pittsburgh, Pennsylvania. He received his bachelor of science degree from Fordham University in 1941 with a major in English and creative writing. After serving in the United States Marine Corps as a radar technician and editor of the Marine Air Group newspaper in Japan, Mr. Scott was a member of the English Department of the University of Pittsburgh where he specialized in engineering writing and technical communications.

ALAN WOOD STEEL COMPANY has announced the appointment of *John L. Hallman* as Manager of the Company's Marketing Division. He was formerly Philadelphia District Sales Manager.

The company has also appointed *J. Bremner Proctor* as General Manager of the Company's new Penco Metal Products Division, acquired recently from Penn Metal Corporation of Penna.

MACWHYTE COMPANY, wire rope manufacturers, have moved their San Francisco warehouse into new quarters at 188 King Street. A complete new building with facilities for handling, cutting, and shipping wire rope has been built.

Formerly located at 141 King Street, the Pacific Coast office and warehouse serves all classes of trade in a wide area. Other West Coast warehouses and company offices are located at Los Angeles, Portland and Seattle.

MINE SAFETY APPLIANCES CO., has moved *John W. Meehan, Jr.* from the New Orleans area to cover Europe for the International Division with headquarters in Zurich, Switzerland, his territory will include all of Europe west of the Iron Curtain, including Germany, France, Holland, Belgium, Turkey, Austria, Switzerland, Spain, Portugal, Italy and the Scandinavian countries. Mr. Meehan will work with dealers and agents on the continent and assist in training programs and demonstrations.

THE HAMMEL-DAHL COMPANY of Providence, R. I., manufacturers of automatic control equipment, announces the election of *John R. Curran* to Vice President. A graduate of Northeastern University, with extension courses at the Massachusetts Institute of Technology in Metallurgy and Applied Mathematics, Mr. Curran became associated with the company in 1945 as Design Engineer. In 1949 he was appointed Chief Design Engineer and in 1953, Director of Engineering.

THE CARHOFF COMPANY of Cleveland, Ohio, has appointed three new jobbers for their new lens cleaning tissues, and dispensers: Safety Equipment Service Corp., Richmond Hill, N. Y.; Sterling Dockson Co., Detroit, Mich.; Spokane Safety Appliance Corp., Spokane, Wash.

OXY-CATALYST, INC., of Wayne, Pa., has announced the appointment of *Gordon P. Larson*, as vice president. Larson, who for six years was director of the Los Angeles Air Pollution Control District, will assist in the development and application of the company's catalytic fume and odor control and industrial waste heat recovery systems.

PARKER SWEEPER CO. has named *Edward G. Nikoden* as sales manager for the Industrial Division. Nikoden will be responsible for all sales functions attendant to the marketing of the company's manual and motorized floor sweepers and industrial carts for maintenance and materials handling. He joined the Springfield, Ohio, company earlier this year as assistant sales manager in the lawn sweeper sales division.

THE YALE & TOWNE MFG. CO. has opened a new industrial lift truck Sales and Service Branch in San Francisco at 563 Second St. *Mr. H. M. Stiles* has been named Branch Manager. Yale hoist sales offices will be maintained in the building under the direction of Mr.

Harry Rose, regional hoist sales manager.

In addition to the Branch service organization, the company's west coast service headquarters will be maintained at the Branch. The territory served by the new branch extends from the northern California state line south to Monterey, San Benito, Madera and Mono Counties and the western third of Nevada.

"AUTOMATIC" SPRINKLER CORP. OF AMERICA has elected *Harry N. Rider* as Vice-President of the company. Mr. Rider will continue to function as manager of the fire protection company's technical and production departments.

Rider joined the firm as a laboratory helper in 1919, becoming manager of the Technical Division in 1936 and Plant Manager in 1953. He has been instrumental in much product development work, including fire alarm, control and extinguishing devices and systems.

Mr. Rider is a charter member of the Society of Fire Protection Engineers and belongs to the American Society of Mechanical Engineers. He is a member of the Fact Finding Committee, National Automatic Sprinkler and Fire Control Association and serves on various committees of the National Fire Protection Association.

SPERRY PRODUCTS INC. of Danbury, Conn. has acquired *WESTERN INSPECTION, INC.* of Midland, Texas. The announcement explains that Western Inspection will become Sperry Western, Inc., with offices remaining in Midland and Odessa, Texas, and in Lake Charles, Lafayette and New Orleans, La. Western's James H. Binford continues as President, with Sperry's R. B. Manning named Vice-President and Treasurer and D. W. Gordon Secretary and Assistant Treasurer. The acquisition was described as part of Sperry's program to expand its non-destructive testing services to U. S. industry.

CLARK EQUIPMENT COMPANY will establish a West Coast plant before the end of the year, Georga Spatta, president, disclosed recently. The new facility will be used as a parts depot at the outset and later will be expanded as an assembly plant for fork lift trucks.

PROTECTIVE EQUIPMENT INC., Chicago distributor of industrial safety equipment, has announced the appointments of G. J. Tresslar as Sales Manager for the firm and R. D. Mulhall as Wisconsin sales representative.

CLARKE SANDING MACHINE COMPANY (Canada) Limited, a newly formed subsidiary of Clarke Sanding Machine Company, Muskegon, Michigan,

Protect Your FEET with

WOOD SOLE STEEL TOE SHOES

They Protect
They Insulate
They're Punctureproof

No. 504-S—Heatproof
No. 501-S—Waterproof
No. 7704-S—Acidproof

REECE has a shoe or sandal to fit the job.

See all at Booth 115

REECE WOODEN SOLE SHOE CO.

There is no substitute for Reece Wooden Soles

Dept. SM 10-55 Columbus, Nebraska

(For details, use Key # K-57 on card on page 85)

AIR OPERATED LITTELL units

- SAVE MONEY
- SAVE FINGERS
- SAVE HANDS
- SAVE TIME

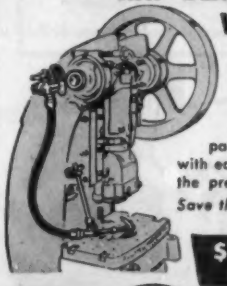
WITH dependable air operated safety units by Littell

Pres-Vac SAFETY FEEDERS...

safely feed blanks to press from the safe distance of 14 inches —BY AIR! Save those fingers.

$35.00

AIR BLAST VALVES...



eject parts safely with each stroke of the press—BY AIR! Save those hands.

$29.00

NEWEST LITTELL UNIT

SHEET LIFTERS..

handle sheets of steel glass, plywood, boxes, cabinets, etc. Safely— Save those Insurance Premiums.

$32.00

F. J. LITTELL MACHINE CO.

Write for FREE Catalog

AIR DIVISION
4187 RAVENSWOOD AVENUE
CHICAGO 13, ILLINOIS
District Offices: DETROIT and CLEVELAND

(For details, use Key # K-58 on card on page 85)

EVERYTHING!

In safety incentives, awards, and safety promotions

GC-11

Two-tone Jewelers bronze etching with Green Cross in enameled colors. Genuine Walnut Shields size 10" x 10½" . . . $10.95. Also available Plain or with AWARD OF HONOR HAND ENGRAVING ONLY 6¢ Per Letter.

Write for your FREE 36 page catalog. Today!

While attending the Safety Convention visit our new large air conditioned show rooms

1933 series is available in over 40 titles. ¼ inch diameter, hard glazed enamel, heavily gold plated pin and safety lock catch. **$10.50 per dozen** (plus F.E.T.)

CLARENCE WILLIAMS

WILLIAMS JEWELRY & MFG. CO.

SILVERSMITHS BLDG. • DEPT. SM10 • 10 S. WABASH AVE.

Phone: CEntral 6-5018 • • • CHICAGO 3, ILL.

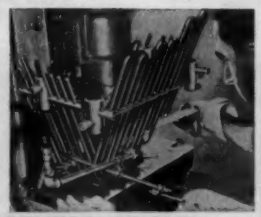
(For details, use Key # K-59 on card on page 85)

SEARJEANT *Safety* GUARDS

FOR **PUNCH PRESSES**

Fit any Press

30 DAY FREE TRIAL



SWEEP GUARD

Guards to fit all types and sizes of punch presses. Single and double sweep arms available. Hardened wearing parts assure years of trouble free service. Send for Bulletin H.

ADJUSTABLE BASKET GUARD

Enclosure type guard, used for blanking and other first operation work, prevents operator from reaching in or coming in contact with moving die. Easily installed on any make punch press. Also available with clear plastic window. Write for free catalogs.

Other Guards Designed and Made by Searjeant

Double Sweep Guard • Two-Hand Electro-Solenoid Control

End Zone Barrier Guard • Enclosure Guard for Milling Machines • Non-Repeat Mechanism

SEARJEANT METAL PRODUCTS, INC. No. 12 Pittsford Rd., Mendon, N.Y.

(For details, use Key # K-60 on card on page 85)

JUSTRITE SAFETY CANS guard against danger more ways!

Made stronger for greater safety. Bodies made of 24 ga. steel with "15 pound" lead coating. Rubbed for extra strength. Double lock-seam construction. Heavy cast malleable spout with self-aligning cover. Pouring lip, for better control in pouring, is cast directly on spout.

Available in 7 sizes—one pint to 5 gallon capacities—from your regular industrial or safety supply distributor.

SEE JUSTRITE SAFETY CANS, OILY WASTE CANS, SAFETY ELECTRIC LIGHTS, ON EXHIBIT AT THE NATIONAL SAFETY SHOW, BOOTH 18.

APPROVED, Inspected and Individually labeled and numbered by Underwriters' Laboratories, Inc.

APPROVED by the Associated Factory Mutual Fire Insurance Companies and so stamped.

APPROVED by New York City Fire Dept. Approval No. 92.

JUSTRITE MANUFACTURING CO. 2061 N. Southport Ave. • Chicago 14, Ill.

LONGEST LIFE BEST VALUE

(For details, use Key # K-61 on card on page 85)

has leased a recently erected plant at 21 Advance Road, Toronto 18, Ontario. The new plant will serve as a sales office, warehouse and service center for the line of rental and contractor floor sanders, edgers and polishers.

Clarke's line of heavy duty floor scrubbing-polishing machines and portable vacuum cleaners will continue to be distributed in Canada exclusively by G. H. Wood & Company, Ltd. of Toronto.

S. C. JOHNSON & SON, INC., has appointed *Samuel C. Johnson* as new products director and a member of the management committee. Johnson will head the newly created department which will assist in the planning, coordination and direction of the new products program of the company. Prior to this appointment he was assistant to the president.

CAMBRIDGE WIRE CLOTH CO. announces that *Thomas M. Creel* has been appointed Sales Engineer to cover the seven-state southeastern territory. Mr. Creel will represent the full Cambridge line of woven wire conveyor belts, industrial wire cloth and special metal fabrications. His headquarters will be at 333 Candler Building, Atlanta, Georgia.

Safety Appointments

R. W. Mattingly has been appointed manager of the Safety and Training Department of Texas Gas Transmission Corp., according to an announcement by John Kirtley, vice president.

Mattingly has been manager of the company's Division I safety and training activities since November, 1953. A native of Owensboro, Mattingly joined Texas Gas in September, 1950, as a safety engineer. He was promoted to senior safety engineer in May, 1952, and shortly afterward placed in charge of Division I safety and training operations.

He succeeds *Willard O. Lape* who has been appointed director of employee relations. In his new position, Lape will be responsible for the operations of the employee relations program, including employment, wage administration, insurance and retirement, safety and training, company housing and general services. He joined Texas Gas in 1950 as supervisor of safety and training and was named manager of the safety and training department in January, 1954. Before his employment by Texas Gas, he was safety director of Arkansas Natural Gas Corp at Shreveport, La.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MISCELLANEOUS

Utility Signs 390
Utilities Safety Supply Co., Inc. This 4-page illustrated folder shows several types of folding and "A" signs for sidewalk and roadside use. Folder also describes Danger flags, linemen's tool and glove bags, and a ground-rod driver and adapter.

Bottle Breaker 391
Front-Dane, Inc. A series of step-by-step pictures shows how device works to break bottles safely in business, institutions, industry, etc. Bulletin also describes uses of the device which is placed over waste can, bottle inserted, and the closing of cover smashes bottle and confines fragments.

Vibration Controller 392
The Bete Corp. Illustrated bulletin describes and gives technical data on a device that measures or monitors vibration. If machinery vibration becomes excessive, switch actuates warning or shuts off machine.

Audio System 393
Mine Safety Appliances Co. An inter-plant or mine communications system is described in a new bulletin. Equipment can be used to transmit safety reports, instructions, warnings, etc. Shows parts of system, accessories and diagram of typical installation.

Radiation Measuring Equipment.. 394
Nuclear-Chicago. New 48-page catalog describes and illustrates complete line of radiation measuring equipment for medical, industrial, and research applications. Includes scalers; rate meters; portable devices; Geiger, proportional and scintillation counters; radiochemicals; and accessory equipment.

Explosion-Vent Windows 395
General Plastics Corp. Illustrated bulletin shows how window panes made of non-shattering tenite butyrate plastic are used as explosion vents, bending or blowing out under pressure.

Magnesium Hand Truck 396
Maglino, Inc. A 4-page illustrated bulletin offers a line of lightweight magnesium hand trucks and shows users how they can custom design the standard models to meet their exact job requirements. Accessory attachments also shown.

Cyanide & Chromic Acid Waste.. 397
Fischer & Porter Co. Processes for treating highly toxic cyanides and chromium compounds in industrial wastes are described in 16-page booklet. Flow diagrams show common methods of treatment and application of instruments for controlling processes.

PERSONAL PROTECTION

New Lineman's Belt 398
Miller Equipment Co. Illustrated bulletin outlines the safety and comfort features of a lineman's belt of new design, permitting the wearer to work more efficiently without strain.

Plastic-Coated Gloves 399
David's Gloves, Inc. Well illustrated folder shows the Plastilife line of plastic-coated work gloves in a wide range of styles. Includes smooth & rough finish, full & palm dip, knit wrist & gauntlet, heavy & light duty types.

FIRE PROTECTION

Multiple Burner Control 400
Electronics Corp. of America. This fully illustrated installation bulletin describes the Fireye Integrated Control System for the safe startup and operation of multiple burner boilers. Includes complete specifications, diagrams, operating procedures and installation directions.

Fire Fighting Equipment 401
Fyr-Fyter Co. A new 16-page catalog on interior fire fighting equipment features a new line of easy-to-install extinguisher cabinets. Catalog also shows extinguishers, hose, nozzles and system valves, connections and parts.

PLANT MAINTENANCE

Maintenance Vacuum Cleaner ... 402
Spencer Turbine Co. A highly versatile vacuum unit for dust removal and general maintenance is described and illustrated in this bulletin. The basic unit can be used as a portable machine or for a stationary system, can be supplied with an explosion proof motor for hazardous locations and with a special tank for wet pick-up.

Asphalt Tile Coatings 403
Gilbreth Co. A new self-polishing floor finish for asphalt tile is announced in this bulletin, which points out such features as resistance to streaking, bleeding, water, temperature changes, etc.

Care for Floors 404
S. C. Johnson & Son, Inc. Informative 24-page booklet offers long-range and day-to-day programs for maintaining all types of floors. Includes sections on floor safety; treatments of common floor faults such as loose tiles, yellowing, water-spotting, tackiness, etc.; and how to choose floor products.

Magnetic Pipeline Traps 405
Eriez Mfg. Co. This 4-page brochure shows how permanent magnetic pipeline traps assure product purity, reduce damage and maintenance, eliminate clog-ups, etc. by collecting fine iron and tramp iron in liquid processing equipment.

Machine Plastering 406
Zonolite Co. New booklet describes how machine application of vermiculite plaster

(Continued next page)

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SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

October, 1955

Please send me the following free data (Remember to fill in your name and address.)

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

Free Bulletins (Cont'd)

and acoustical plastic speeds building construction and maintenance. Pictures show variety of applications.

GUARDS & TOOLS

Press Two-Hand Control 407
Searjeant Metal Products, Inc. An electro-solenoid two-hand control attachment for punch presses is described in this bulletin, which outlines safety features for operator and its own fail-safe design.

Mallets 408
LaPierre Sawyer Handle Co. Illustrated folder describes and gives size specifications for a line of wood mallets for tinners, plumbers, maintenance men, electrical, printing and other workers.

Explosive-Actuated Cable Cutters 409
Beckman & Whitley, Inc. Three designs of guillotine-type explosive-actuated cable cutters are described in a new leaflet which includes photographs of the three types for various sizes of cable and also scaled dimensional drawings and specifications.

DUST & FUME CONTROL

Portable Ventilator 410
Mine Safety Appliances Co. Bulletin illustrates and describes a portable blower or exhauster for use with or without a collapsible air duct in shipyards, railroads, public utilities, chemicals, refineries, steel plants, etc. to remove dust or fumes and to provide fresh air.

Paint Booth Filters 411
Research Products Corp. This 12-page booklet clearly outlines the purpose, use, installation, and servicing of paint over-spray arrestors for spray booths. Includes specifications, while drawings and photos show typical applications for various types of spray systems.

Lint Collector 412
Eastern Cyclone Conveyor System, Inc. New bulletin shows the simplified installation and operation of a lint collector system, available in 4 size capacities for any number of tumblers in textile manufacturing, upholstery & furniture production, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
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	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
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183	Employee Safety Guide

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WHAT'S YOUR PROBLEM?

Terminal Management

Penn State's Institute of Public Safety has announced a new practical Efficient Terminal Management course, to be offered for the first time on its campus, October 11–13. The course is intended for motor freight terminal managers, dispatchers, warehouse foremen, and others charged with sound, effective terminal operations. Specialists from the trucking industry, as well as national and state organizations, will join staff members from the University in conducting the sessions.

Major Topics

Major topics to be covered include functions in terminal management, qualifications of a good terminal manager, how to select good terminal employees, all types of training programs, principles of supervision and management, interest and morale building, and standards as developed through time and motion study.

Each person attending all sessions and otherwise fulfilling course requirements will receive a certificate for having completed the course. For further information, write: Professor Amos E. Neyhart, Administrative Head, Institute of Public Safety, University Park, Pennsylvania.

HELP WANTED

Chemical Safety Engineer

Technically trained Safety Engineer with chemical plant experience wanted to head up safety, fire protection, and plant security in heavy chemical plant in West Virginia. Fine opportunity to exercise initiative and organizing ability, with free hand to do what's needed. Please state experience and desired salary range in reply, addressed to: Box SCWV, c/o Safety Maintenance, 75 Fulton St., New York 38, N. Y.

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(For details, use Key # K-62 on card on page 85)

How Do You Look at an Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Remember that you are not deciding who is at fault.

Case No. 9—Driver's Statement

"I pulled up to the crossing. There was no stop sign. I came almost to a full stop, looked in both directions. There was a perfectly clear view each way, and no one was coming. I shifted into second and started on across, when this other car shot out of nowhere, going like a streak, horn blowing, and slid into me! He must have been traveling very fast, since he skidded 80 feet."

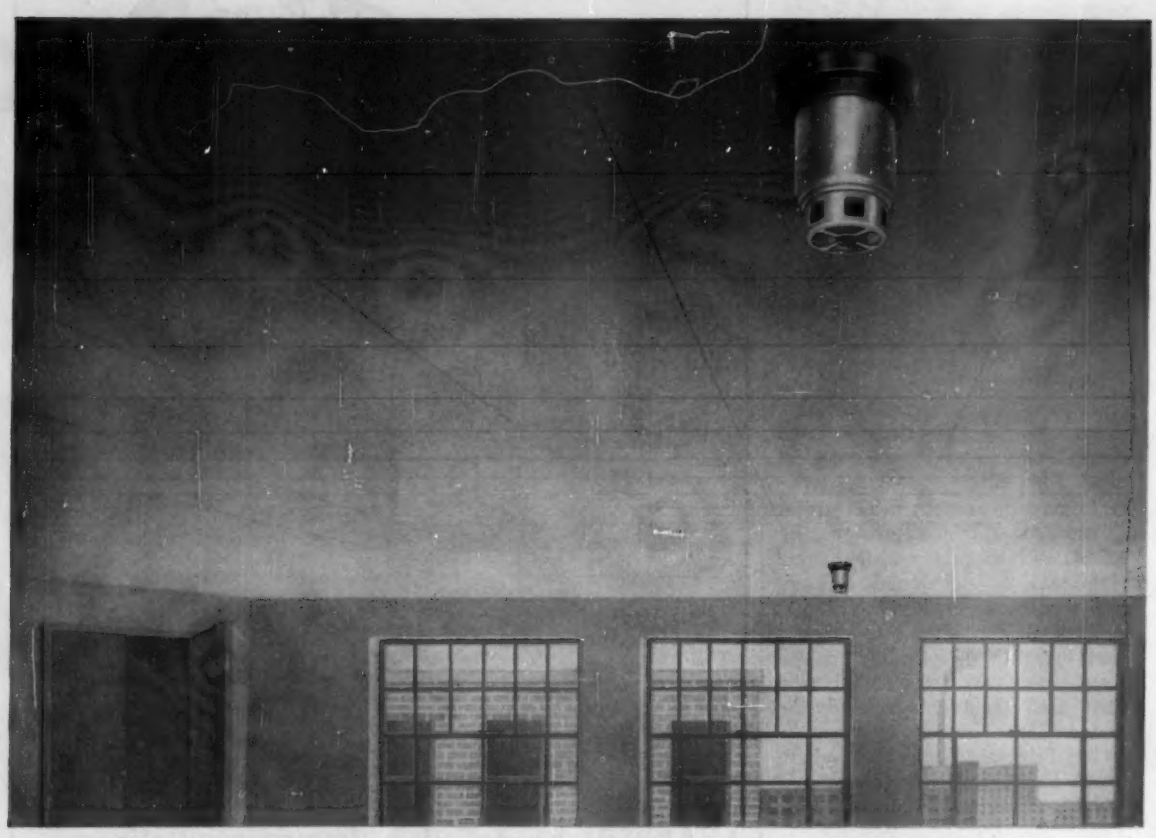
Case No. 10—Driver's Statement

"While driving on the street, I started to turn a right corner. I had to start fairly wide to make the right turn into it. I gave an arm signal for right turn and started to turn at about 20 mph, when this other guy caused the accident by trying to pass me on the right side! The police arrested him for improper passing. He obviously caused the accident."

Answers on page 102

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area... harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire... requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

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(For details, use Key # K-63 on card on page 85)

Industrial Fire Organization Guide

A new informative and advisory text on organizing for fire safety in modern industrial establishments has been published by the National Fire Protection Association. Designated NFPA No. 6-M, "A Guide for the Organization of Fire Safety in Modern Industrial Establishments," the publication outlines the recommended development of a fire safety organization on both the plant basis and multi-plant basis, and treats essentially the "fire safety" aspect of loss-prevention. While this text has been published in the format of an NFPA standard, it is only intended for informative and advisory purposes and not as a regulatory standard.

It is available in pamphlet form (18 pages—35 cents per copy) from the NFPA, 60 Batterymarch St., Boston, Mass.

Radiation and the Fireman

The International Association of Fire Chiefs has announced publication of its newly-revised study, "Radiation and Monitoring Fundamentals for the Fire Service."

When originally issued in 1952, this report was used by fire departments and other organizations in the United States and Canada for the study of defense against atomic warfare. In revising the original text, the IAFC has brought the problem of radiological hazards into their proper perspective, particularly in view of the importance of radioactive fall-out. Both the original and revised texts were written by IAFC's Committee on Radiological Hazards in Fire Fighting under the chairmanship of Mathew M. Braidech, research director of the National Board of Fire Underwriters.

According to Mr. Braidech, familiarity with the information which has been presented, together with its prudent application, will enable fire officers to protect their own personnel from the hazard of radioactivity and permit them to do their work without constantly checking with other monitoring units. Since the fire effects from atomic weapons constitute one of the most serious threats, early efforts in preventing the merging of a large number of scattered fires may forestall the formation of extensive mass fires and their accompanying death and destruction.

The new publication presents a review of elementary atomic physics and discusses the general features of a nuclear explosion with particular emphasis on blast, heat and radiation effects. Instruments and methods for detecting and measuring radioactivity as well as decontamination techniques and protective safeguards against contamination are discussed.

A list of selected reading references is offered for those who wish to study the various topics in greater detail. The appendix contains a list of nuclear explosions which have occurred and a complete transcript of the "Report by the United States Atomic Energy Commission on the Effects of High-Yield Nuclear Explosions."

July Losses Dip

Estimated fire losses in the United States during July amounted to $61,614,000, the National Board of Fire Underwriters has reported. This loss represents a decrease of 11 percent over losses of $69,532,000 reported for July, 1954, and a decrease of 13 percent from losses of $70,828,000 for last June (1955).

Losses for the first seven months of 1955 now total $531,371,000, an increase of 1.1 percent over the first seven months of 1954, when they amounted to $525,522,000. These estimated losses include an allowance for uninsured and unreported losses.

Fire Standard Pamphlets

A series of four new and revised fire safety standards has been published by the National Fire Protection Association, it was announced by Robert S. Moulton, Technical Secretary. Each of the standards is available in pamphlet form from the NFPA, 60 Batterymarch St., Boston. The series includes: No. 82, 82A "Standards for Incinerators, Rubbish Handling" (26 pages—35¢); No. 505 "Standards for the Use, Maintenance and Operation of Industrial Trucks" (12 pages—25¢); No. 10 "Standards for the Installation, Maintenance and Use of First Aid Fire Appliances" (70 pages—50¢); No. 220 "Standard Types of Building Construction" (5 pages—25¢).

NFPA standards, prepared by technical committees, representative of all interests concerned, provide guidance for the reduction of loss of life and property by fire. Although purely advisory, these standards are widely used as a basis for laws, ordinances and regulations issued by fire marshals and other authorities responsible for the public safety.

Safe Maintenance for . . .

PORTABLE FIRE EXTINGUISHERS

PART II This is the second of 3 installments of the *"Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers"* prepared by and reprinted through the courtesy of the Fire Equipment Manufacturers' Association, Inc. The first installment appeared in the September issue, and the last will appear in November.

Scope and Purpose

The scope and purpose of this safety code are intended to insure proper inspecting, recharging and maintaining of portable fire extinguishers.

Application

This safety code shall apply to all types of portable fire extinguishers.

Definitions

Where the word "shall" is used, that provision is intended to be mandatory.

Where the word "should" is used, that provision is intended to be advisory or recommended good practice.

Wheeled - CO_2 Type

Wheeled Type—The Fyr-Fyter Co.

Wheeled Type—Pyrene—C-O-Two

Wheeled Type—American-LaFrance-Foamite Corp.

Wheeled Type—Walter Kidde & Co., Inc.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, for tampering, mechanical damage and loss of weight. If the charge in a cylinder is 10 per cent less than normal, it shall be recharged to proper weight. Extinguishers which are empty and show no sign of being physically discharged, should be inspected for a ruptured safety disc, leaks in packing, or deterioration of the cylinder.

If an extinguisher has a ruptured safety disc, due to excessive pressure caused by high ambient temperature, the safety disc shall be replaced with one which is of the correct size and material for the particular extinguisher, as specified by the particular manufacturer of the extinguisher.

If the extinguisher has a defective seal in the discharge device, it should be discharged, repaired, recharged and tested for further leaks.

Extinguishers shall be recharged immediately after use.

After extinguisher is in use for five years, it shall be subjected to a hydrostatic pressure test to determine as fully as possible its fitness to withstand recharging for further shipment and use. This requirement covers only extinguishers to be recharged. It does not mean that an extinguisher must be discharged and tested every five years.

Hand Type—The Fyr-Fyter Co.

- Hand

Extinguisher shall have its discharge device, or valve, removed and be subjected to a test by internal hydrostatic pressure in a water jacket to determine the expansion of the cylinder. This periodic test must include a visual internal and external examination.

The pressure required shall be 5/3 the service pressure of the cylinder and shall be applied for at least 30 seconds or as long as is deemed necessary to obtain complete expansion of the cylinder.

Cylinders which are hydrostatically tested and are found to have a permanent expansion in excess of 10 per cent of the total expansion, and/or one or all of the following defects appear shall be condemned:

(a) Loss of metal thickness either by localized pitting or large area corrosion, when such loss exceeds .005 inch for a cold drawn cylinder or 1/32 inch for a hot forged cylinder.

(b) Loose scaly material on the outside of the cylinder which freely breaks away upon hammering or jolting of the cylinder.

(c) Foreign deposits or inclusions adhering to the outside cylinder wall or bottom. If cylinder is found to be usable, the date of test shall be stamped under the original date of test on the dome of the cylinder.

Recharging

If extinguisher is to be discharged before recharging, the out-

Hand Type—American-LaFrance-Foamite Corp.

Hand Type—Walter Kidde & Co., Inc.

Hand Type—Stop-Fire, Inc.

Hand Type—Pyrene—C-O-Two

Hand Type—The General Detroit Corp. —The General Pacific Corp.

Hand Type—Badger Fire Extinguisher Co.

Hand Pump—Walter Kidde & Co., Inc.

Hand Pump—The General Detroit Corp. —The General Pacific Corp.

let shall be equipped with a suitable device to prevent recoil of the unit.

Extinguishers subjected to a hydrostatic pressure test or devalved shall have cylinders that are dry internally and free of rust or foreign material when recharged.

If valve has been removed from cylinder for any reason, when reassembling valve to cylinder, proper torque as specified by the manufacturer shall be applied.

The carbon dioxide supply may be either a cylinder or a liquefier. In both cases, the supply should contain dry carbon dioxide in a liquid state and be of a temperature of between 0° and 88° Fahrenheit.

The extinguisher should be placed on a scale to record the weight of the carbon dioxide entering it. The weight of the carbon dioxide charge shall not exceed the

(Continued at top of page 93)

Hand Pump - Vaporizing

Hand Pump—Stop-Fire, Inc.

Hand Pump—The Fyr-Fyter Co.

Hand Pump—Pyrene—C-O-Two

Hand Pump—American-LaFrance-Foamite Corp.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are full. Inspect hose, nozzle and gaskets and, if unserviceable, replace.

At least once yearly extinguishers shall be examined as to condition of pump or pressure and for deterioration or injuries due to misuse.

Extinguishers shall be kept full at all times and shall be refilled immediately after use.

Test the direct acting pump type by moving the pump handle several in and out strokes. Vaporizing liquid ejected in testing may be discharged into a clean, dry glass receptacle. Pour the ejected liquid back into the extinguisher, using a clean, dry funnel. Test continuous stream type extinguishers by pumping up pressure and ejecting vaporizing liquid in both up and down and around-the-clock positions.

Enough vaporizing liquid shall be added to bring it up to the required level.

Test the stored pressure type

weight of the carbon dioxide charge which is permanently marked on the extinguisher.

After cylinder is fully charged, it shall be placed under water and observed until certain that there is no leakage. After leakage test, all traces of water shall be removed. If valve requires repair, unit shall be discharged before proceeding.

Recharging work shall be done under capable supervision, and after installation of wire and lead seal, recharge date shall be recorded on a card which shall be attached to the extinguisher.

Extinguisher should not be located in temperatures in excess of 130° Fahrenheit as this may cause rupture of the safety disc due to excessive pressure. If the ambient temperature is expected to exceed 130° Fahrenheit the extinguisher shall be undercharged in accordance with the recommendations of the particular manufacturer.

Stored Pressure—Walter Kidde & Co., Inc.

Stored Pressure—The Fyr-Fyter Co.

Liquid - Stored Pressure

extinguisher by discharging a small amount of vaporizing liquid to atmosphere. Before refilling a single chamber pressure type extinguisher, the remaining pressure shall be released by inverting the extinguisher and opening the operating valve. The vaporizing liquid ejected shall be replaced and the extinguisher shall be filled to its rated capacity. Press nozzle to air hose. Shake extinguisher. Add more air until gauge remains at required pressure.

If an extinguisher of the stored pressure type shows evidence of corrosion or mechanical injury, it may be unsafe for further use and should be returned to the manufacturer for examination.

Stored Pressure—The General Detroit Corp.—The General Pacific Corp.

Stored Pressure—Pyrene—C-O-Two

Stored Pressure—American-LaFrance-Foamite Corp.

Stored Pressure—Stop-Fire, Inc.

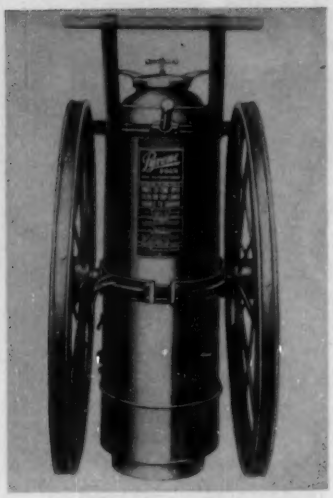
Recharging

Follow the manufacturer's directions on the instruction name plate.

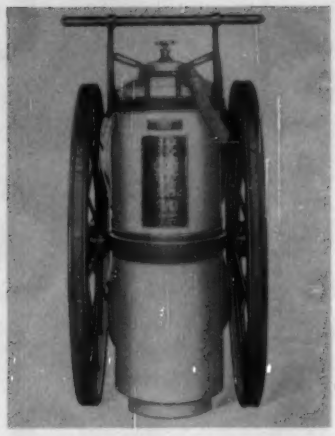
Test extinguishers in accordance with the procedure as outlined under Inspection and Maintenance.

Water shall not be used in vaporizing liquid type extinguishers for test or for any other purpose.

Vaporizing liquid other than that furnished by the manufacturer

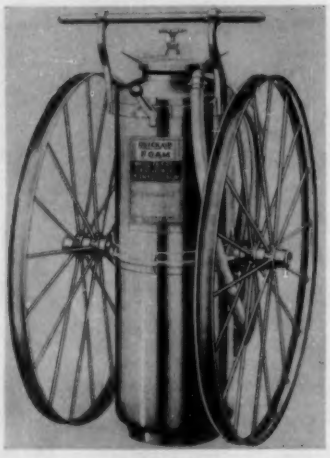


Wheeled Type—Pyrene—C-O-Two



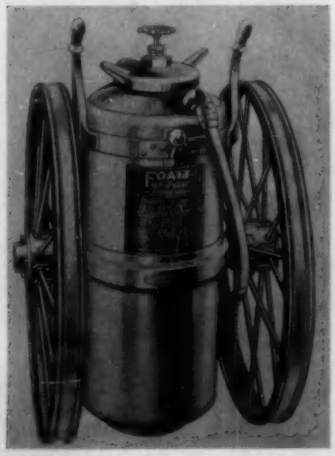
Wheeled Type—Safety Fire Extinguisher Co.

Wheeled -



Wheeled Type—The General Detroit Corp.—The General Pacific Corp.

Wheeled Type—Walter Kidde & Co., Inc.



Wheeled Type—The Fyr-Fyter Co.

Wheeled Type—American-LaFrance-Foamite Corp.

should not be used in these extinguishers, because it is liable to render the extinguisher inoperative or make it dangerous for use.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Chemical Foam

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are not empty, as well as to see that the orifice of the hose nozzle is not clogged. Examine extinguisher for physical damage to shell or seams. If extinguisher shows evidence of mechanical damage, corrosion or distortion of the shell due to freezing temperatures or from other causes, it may be unsafe for further use and shall be subjected to a hydrostatic pressure test.

Chemical foam type extinguishers shall be recharged annually as well as immediately after use and must be protected from freezing temperatures.

Every five years extinguishers which have been in service shall be subjected to a hydrostatic pressure test to determine that they are still capable of safely withstanding the pressures which may be generated during operation.

Hydrostatic Pressure Test

Pressure shall be applied at a rate-of-rise to reach 300 pounds per square inch in approximately one minute.

Pressure of not less than 300 pounds per square inch and not more than 350 pounds shall be applied to hand types and a pressure of 400 pounds to wheeled types.

The extinguisher should be checked for leakage, distortion, or other signs of failure.

(Continued on page 96)

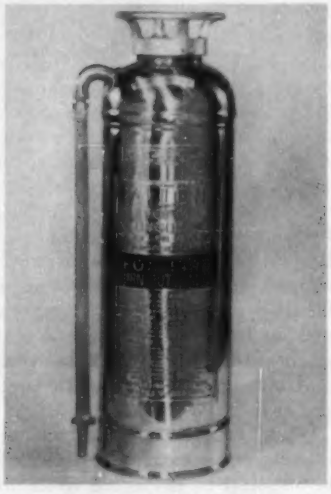
Hand

Hand Type—Badger Fire Extinguisher Co.

Hand Type—American-LaFrance-Foamite Corp.

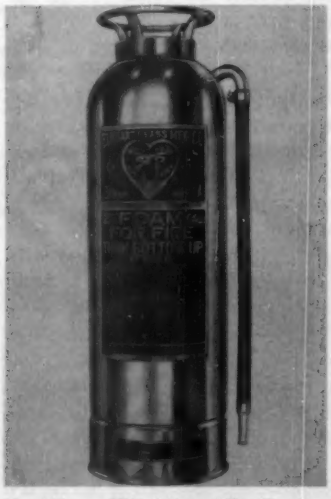
Hand Type—Walter Kidde & Co., Inc.

Hand Type—Pyrene—C-O-Two



Hand Type—W. D. Allen Mfg. Co.

Hand Type—The General Detroit Corp. —The General Pacific Corp.



Hand Type—Elkhart Brass Mfg. Co., Inc.

Hand Type—The Fyr-Fyter Co.

Hand Type—Stop-Fire, Inc.

Chemical Foam
(Continued)

Pressure shall be held for one minute, after which pressure shall be released.

Any extinguisher which shows leakage, distortion, or other signs of weakness should be mutilated to the point where it could not be placed back in service, and then scrapped.

Extinguishers which do not show any of the faults noted may be recharged and returned to normal service.

Recharging

Thoroughly clean extinguisher interior and all parts with warm water. Run water through hose and nozzle, making sure there is no obstruction in either. Do not use rags, waste or anything which might possibly clog nozzle or screen.

Examine extinguisher head to make sure the threads are in good condition. Head should be held by four full threads. If charging more than one extinguisher at a time, the head should be replaced on the same extinguisher from which it was removed.

Inspect hose, head gasket, inner chamber and loose stopple. If unserviceable, replace.

Recharges other than those furnished by the manufacturer should not be used in these extinguishers, because they may be compounded of substandard ingredients, and in excess of or deficient in quantity.

The units of the chemical foam charge should be mixed in separate containers in accordance with the instructions on the recharge package.

All solution in both the inner chamber and outer chamber should be thoroughly dissolved before placing in the extinguisher.

Solution level should never be above the water mark on the inside of the extinguisher. Solution in inner chamber should be kept at the water mark stamped on this part.

Replace loose stopple and place inner chamber in extinguisher. Replace head, screwing down tightly.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Correction

In Part 1, published in the September issue, some of the material on the recharging of cartridge-operated water extinguishers was inadvertently printed as part of the directions for recharging the pump-tank water extinguisher. This incorrectly placed material consists of the last six paragraphs at the top of page 38 in the September issue. To give readers complete guidance in the safe maintenance of the cartridge-operated water extinguisher, we are reprinting below the entire text on the cartridge-operated type, including the paragraphs previously omitted from that section.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are not empty, as well as to see that the orifice of the hose nozzle is not clogged. Examine extinguisher for physical damage to shell or seams. If extinguisher shows evidence of mechanical damage, corrosion or distortion of the shell due to freezing temperatures or from other causes, it may be unsafe for further use and shall be subjected to a hydrostatic pressure test.

While water type extinguishers do not require annual recharging, they should be inspected to assure that the water level is up to the proper mark. Extinguishers must be recharged immediately after use and must be protected from freezing temperatures.

Cartridges shall be removed and examined. All carbon dioxide pressure cartridges shall be weighed on an accurate scale to detect loss of carbon dioxide by leakage, and a new cartridge of the same make being used to replace any which shows a loss of ½ ounce or more from the original weight stamped on it.

Every five years extinguishers which have been in service shall be subjected to a hydrostatic pressure test to determine that they are still capable of safely withstanding the pressures which may be generated during operation.

Hydrostatic Pressure Test

Pressure shall be applied at a rate-of-rise to reach 300 pounds per square inch in approximately one minute.

Pressure of not less than 300 pounds per square inch and not more than 350 pounds shall be applied to hand types and a pressure of 400 pounds to wheeled types.

The extinguisher should be checked for leakage, distortion, or other signs of failure.

Pressure shall be held for one minute, after which pressure shall be released.

Any extinguisher which shows leakage, distortion, or other signs of weakness should be mutilated to the point where it could not be placed back in service, and then scrapped.

Extinguishers which do not show any of the faults noted may be recharged and returned to normal service.

Recharging

Thoroughly clean extinguisher interior and all parts with warm water. Run water through hose and nozzle, making sure there is no obstruction in either. Do not use rags, waste or anything which might possibly clog nozzle or screen.

Examine extinguisher head to make sure the threads are in good condition. Head should be held by four full threads. If charging more than one extinguisher at a time, the head should be replaced on the same extinguisher from which it was removed .

Inspect hose, head gasket and cartridge. If unserviceable, replace.

Check cartridge puncturing mechanism to be sure it is undamaged. If unsatisfactory replace mechanism, if removable, or replace complete head.

Extinguisher shall be filled with water to water mark on inside of shell. Do not fill above this mark.

Replace fully charged cartridge furnished by the manufacturer, and screw head tightly on extinguisher.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

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What's New...

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KILN COOLING FANS

(Use Key # 626 on Inquiry Card on page 85)

RUGGED and powerful kiln-cooling fans that deliver a large volume of air at high velocity are available from F. R. Hannon & Sons. The portable units are made in two models: Hanco Pedestal Base (Type S), and Wheeled (Type KW). When directed into hot kilns, they drive out gases and greatly speed cooling. They also deliver fresh, cool air so that unloaders can work with greater comfort and safety.

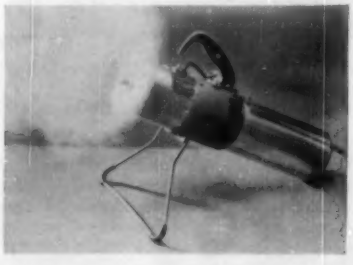
The large fans are easily moved and can operate in any position. They are weatherproof, built for severe service and have fully enclosed motors. The pedestal type is available with 24 or 36 inch fan blade diameters; and the wheeled type in the larger size.

INSECTICIDE FOG GENERATOR

(Use Key # 627 on Inquiry Card on page 85)

A POWERFUL new insect-killing weapon that expels a penetrating fog has been introduced by Silver Creek Precision Corp. Weighing nine pounds and equipped with a detachable stand, the portable Microsol fog generator has a built-in fan which rotates at 19,000 r.p.m. It converts any insecticide into micron-size particles capable of covering 64,000 square feet in 15 minutes.

It is effective for home, store, factory, farm and institutional use. Any insecticide can be poured into the leak proof tank. The insecticide is sucked into the stainless steel fan and dispersed in a fog of particles.



FIRE DOOR EXIT LOCK

(Use Key # 628 on Inquiry Card on page 85)

STORE AND factory executives and warehousemen will be able to save estimated millions of dollars lost by pilferage through unlocked, unguarded fire and emergency exit doors. Use of the "Fire Exit Lock and Alarm System," which is made by Exit Lock Co. and carries the seal of Underwriters' Laboratories, Inc., has been authorized for use by the New York City Board of Standards and Appeals, the Uniform Building Code, Office of the Secretary of Defense, Central Intelligence Agency in addition to insurance safety engineers and fire protection authorities.

The Fire Exit Lock, which attaches simply to any type of emergency door, rings a loud bell alarm if the door is opened without authorization or during an emergency. Personnel who are authorized to use these doors receive special keys enabling them to leave without sounding an alarm. Previously, fire, health, building and labor regulations required that emergency exits be unlocked from the inside at all times that buildings are occupied so that in case of fire, panic or other emergency, the building could be evacuated quickly. The use of padlocks on fire exist doors is not only dangerous but also in many areas illegal. But this new type of quick release lock provides protection to plant owners without endangering lives of personnel.

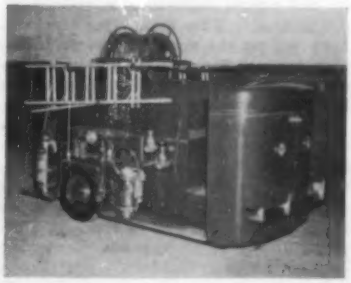
The Fire Exit Lock, constructed of aluminum and cast bronze, is entirely mechanical in operation and completely contains the alarm bell, lock and spring mechanism. A glass panel is broken by only 10 pounds pressure on a metal striker to release the lock and activate the bell. It is operated by a direct blow of the hand or, on doors with panic bars, indirectly through an extension to the bar.

IN-PLANT FIRE TRUCK

(Use Key # 629 on Inquiry Card on page 85)

A VERSATILE fire truck designed for use inside industrial plants is being manufactured by Gordon W. Osborne. Standard models carry a 150-gallon water supply, 100 feet of hose on a reel, 24-foot wooden ladders, five hand extinguishers of various types, hand lanterns, control panel, outside water connection and other fire-fighting accessories In addition to the water tank, or in place of it, the truck can be equipped with a dry chemical tank of 150, 350 or 500 lb. capacity for plants having large flammable liquid or electrical fire hazards.

The unit is 48 inches wide, 114 inches long and has a turning radius of 64 inches for maneuverability in factory aisles. The truck has a 3-speed transmission and a speed of up to 15 mph. Other features are hydraulic brakes, sealed beam headlights, and 6-volt siren. Equipment can be modified to meet individual needs.



DRIPLESS BOTTLES FOR REAGENTS

(Use Key # 630 on Inquiry Card on page 85)

THE FIVE-PINT bottles of Du Pont C. P. Reagents are now equipped with a new plastic sleeve fitted on the necks, it is announced by the Du Pont Grasselli Chemicals Department. The dripless sleeve provides new safety for laboratory technicians by keeping the outside of bottles dry, protecting the hands, reducing the hazard of bottles slipping, preventing defacing of labels, and eliminating the need to wash the outside of the bottles. The reagents that are available in the new dripless bottles are: sulfuric acid, nitric acid, glacial acetic acid, hydrochloric acid and ammonium hydroxide.

VIBRATION MOUNTINGS

(Use Key # 631 on Inquiry Card on page 85)

A NEW LINE of heavy-duty general purpose steel spring vibration mountings has been developed by T. R. Finn & Company, Inc., specialists in shock and vibration control. These "Finnflex" Type SB Steel Spring Vibration Mountings are said to combine the strength of steel springs with unique damping, sway and thrust control elements for an unusual degree of isolation. A cast semi-steel housing contains helical steel springs, rubber thrust bumpers, nylon dampers, and a steel base plate with sway control assemblies. A dual-purpose bolt secures the mounting to the machine and also provides an easy means of leveling.

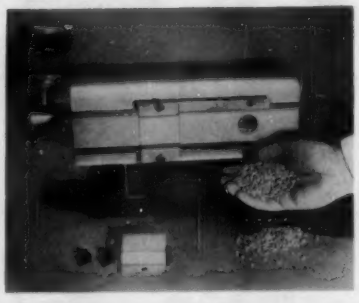
Nylon-lined, pre-compressed, cylindrical rubber bumpers absorb thrust in any horizontal direction. The nylon liners protect the rubber from abrasion and thus assure a constant degree of stiffness. Because of the low-friction characteristics of nylon, an unusually high degree of thrust control is obtained without any undue increase in vertical stiffness.

Optimum damping is also provided by the nylon liners which are pressed snugly around steel studs by the precompressed rubber thrust bumpers. All wear is taken up and proper adjustment is maintained automatically. This design provides stability without the need for external snubbing devices. The proper degree of sway control can be set by simple adjustment of the self-locking sway control nuts. The mountings are available with rubber-bottomed, non-walking baseplates which eliminate "creeping" or "walking" of the equipment and the need to lag the mountings to the floor. The line consists of 41 standard sizes, ranging in rated load capacity from 100 to 6500 pounds, with higher load capacities available.

BEAM SCAFFOLD

(Use Key # 632 on Inquiry Card on page 85)

AN ALL-METAL beam scaffold, or hanger, for suspending planking or catwalks from I-beams and girder-type structures, has been introduced by Bil-Jax, Inc. Gravity holds the scissors-hook safely in place on the beam. Used in sets of two or more, these units have stirrups which can handle planks or catwalks up to 14" wide. Units are equipped with fixtures for attaching standard Bil-Jax diagonal braces and guard rails. Ease of erecting, moving and removing, are features which make it suitable for jobs such as light fixture maintenance, ceiling washing and repair, where machinery or other obstructions make other type scaffolds impractical. It is built and designed to give continuous service for many years.



LEADED GAS EXHAUST PURIFIER

(Use Key # 633 on Inquiry Card on page 85)

A CATALYTIC answer to the engine exhaust problem of all gasoline-powered industrial trucks operating on leaded gasoline has been announced by Oxy-Catalyst, Inc. The new device, the Oxy-Muffler, is the first catalyst exhaust purifier that can be used on leaded gasoline—the most common type of fuel for in-plant trucks. It eliminates by catalytic burning as much as 90 percent or more of the carbon monoxide and most of the aldehyde and hydrocarbon fumes in engine exhausts of fork lift trucks, power sweepers, and other in-plant vehicles, permitting them to be operated with greater safety in enclosed plant areas. The device is designed as a direct replacement for a truck's acoustical muffler and can be quickly installed on any standard industrial vehicle without major or carburetor changes.

To produce an efficient catalytic purifier that would overcome the problem of deactivation of the catalyst by the lead in ordinary gasoline, Oxy-Catalyst developed a catalyst and muffler structure entirely different from those for unleaded gasoline and propane engines. The muffler has a number of chambers containing beds of tiny catalyst pellets. As the hot exhaust gases flow down through the pellet beds, they are burned by catalytic chemical action to a safe, odorless exhaust of carbon dioxide and water vapor. Burning occurs without flame. The catalyst bed just glows.

From a cold start, the Oxy-Muffler provides full rated clean-up after only a brief warm-up. Extended life tests indicate that it will provide up to 90 percent clean-up for at least 600 operating hours. When efficiency drops below the level desired, the catalyst pellets can quickly be removed and replaced with fresh ones. A pyrometer indicator gives the operator a continuous panelboard indication of catalyst efficiency and engine performance. The muffler comes in three basic sizes for engines with piston displacements ranging from 0–75, 76–150 and 151–230 cubic inches.

RADIUM SIGNS

(Use Key # 634 on Inquiry Card on page 85)

EXCLUSIVE RIGHTS to manufacture radioactive signs in the United States against German patents has been granted to the Bettinger Corporation. Made of radium oxide on porcelain enamel, the signs have particular application in industrial safety civil defense programs.

Since the radioactive material glows by itself, signs, plaques, or any type of information-bearing item can make use of the patented process for protection in blackouts, power failures and in any type of emergency. The glowing signs are impervious to all types of weather and atmospheric conditions, making them useful for streets, shelters and military installations. The amount of radiactive ingredient necessary is far below the toxic level, even when the signs are stored in large quantities. Other applications include: railroads, airports, merchant ships, docks, exit and emergency signs, plant safety markers, On and Off handles for machinery and switches.

PROTECTIVE COATING

(Use Key # 635 on Inquiry Card on page 85)

A NEOPRENE BASE protective coating, Corrocote 362, that guards surfaces of many materials against moisture, oils, chemical fume and splash, salt air and fungus corrosion, has been developed by Chemical Coatings & Engineering Co. Ap-

plied by roller, brush, spray or dip, the film dries quickly and self-vulcanizes to form a firm, long lasting, rubbery barrier. The addition of oils or plasticizers is not necessary, for the natural toughness and elasticity of the film eliminates failures caused by expansion, contraction and mechanical vibration. The cured film will not support combustion, resists sunlight, abrasion and weather, is a non-conductor, and effectively counteracts electrolytic corrosion. It has good adhesion to metal, concrete, wood and fabric. Coatings can be exposed to continuous air temperatures up to 250° F. and intermittently to 300° F.

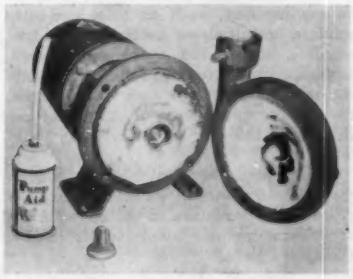
On walking surfaces—metal, wood, concrete—when sand is sprinkled while the coating is wet, the finished surface has excellent non-slip qualities. It is available in gray, black, aluminum and red. Applications include: exteriors of pipes, tanks, vats, ducts, structural steel; repair of conveyor belts; use on power transmission shafts, valve parts, bushings, air conditioning and ventilating equipment; lining for fans, impellers, ducts; protection for floors, duck boards and concrete against acid or caustic attack; electrical switch and terminal housings, wire, wire rope; marine gear, decks, rudders, canvas, etc.

STICKING PREVENTIVE FOR PUMPS

(Use Key # 636 on Inquiry Card on page 85)

TO PREVENT sticking of seasonally operated pumps, such as are used for air conditioning water recirculating equipment, swimming pools, marine equipment, domestic water in resort areas, auxiliary pumps, etc., Garman Co., Inc. is producing a new product called "Pump-Aid." To protect against continued corrosion and consequent sticking, and other "down" period problems, the product is injected under pressure through the drain hole into the pump housing cavity immediately after draining pump. It is supplied in aerosol canister, using fluorinated hydrocarbon (Freon) type propellant, to apply a generous coating over all surfaces. Pump-Aid is also beneficial in preserving neoprene, rubber, and graphite type seals.

It will not freeze; will not evaporate; requires no special job preparation to use; adheres to surfaces permanently until flushed off; is water soluble—not necessary to drain when season starts; non-toxic—may be used for seasonally operated domestic pumps if properly flushed; and economical to use. According to the manufacturer, if a pump impeller turns freely at the time it is injected, it will start up again without sticking next season.

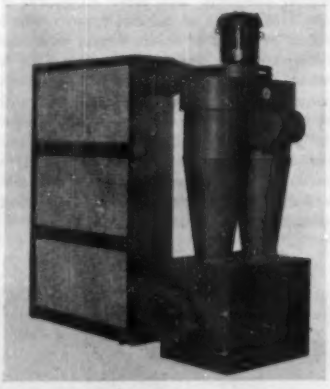


VENTILATED ARM GUARD

(Use Key # 637 on Inquiry Card on page 85)

A NEW lightweight arm protector has been brought out by Wheeler Protective Apparel, Inc. The new product features a wire mesh construction which allows free movement of air through to the arm of the wearer, yet also affords protection against flying objects, abrasion, and cutting by metal or glass sheets.

A simple lock slide closure is incorporated into the straps and permits full adjustment. The protector wraps fully around the arm. A hollow, tubular edge binding finishes off the wire cloth neatly and serves to keep the mesh away from the arm. Monel or electro-galvanized steel wire cloth is available and the unit can be sterilized. Applications for the new arm protector include handling of steel sheet, glass, protection of arms for meat cutters and other work where danger of arm injury is present.



FILTER ATTACHMENT FOR DUST COLLECTOR

(Use Key # 638 on Inquiry Card on page 85)

HIGHLY EFFECTIVE filtration through its six "throw-away" filters is one of several features of the new after-filtering mechanism designed for the Torit model 219 FM-A cyclone-type dust collector by Torit Manufacturing Co. Used to collect dust, lint, chips, powders and fumes in industrial plants, the 219 FM-A recirculates filtered air back into the room, thus preventing heat loss during cold weather. Its 5 HP, 3450 RPM motor pulls 2100 cu. ft. of air per minute through the 8" inlet at a static pressure of 3.0" (water) and an air speed of more than a mile a minute.

Depending upon the particle's size and specific gravity, efficiency of the unit's centrifugal action varies from 75% to 95%; thick pads of glass insulation wool on each of two open surfaces on the after-filter frame remove any fine dust that has not already been trapped in the internal reservoir. There is no loss in the machine's initial performance from the filter addition. Each filter is held to the frame by wing nuts, and they may be quickly removed for replacement. Frame is 20-gauge steel with blue-gray wrinkle finish and measures 81" x 51" x 14".

DANGER AND WARNING TAPES

(Use Key # 639 on Inquiry Card on page 85)

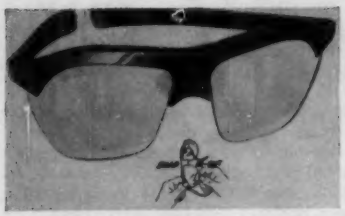
AMONG THE MANY uses for printed pressure sensitive tapes are included danger and warning signals. The tapes show up well, are easy to apply and can be removed without leaving a mark. They also are re-applicable to the same or other locations.

Two of the most popular tape materials are the so-called "flatback," and glossy colored acetate, according to Labelon Tape Co., Inc. Both materials can be printed clearly, and are available with a wide variety of imprinted standard warnings. The tapes will stick to wood, metal, glass, tile, plastic, or any smooth material that is clean and dry. The tapes are packaged in rolls up to approximately 2000" in length and in widths from 3/8" to 3". A variety of colors is available for both tapes and printing.

CORROSION INHIBITORS

(Use Key # 640 on Inquiry Card on page 85)

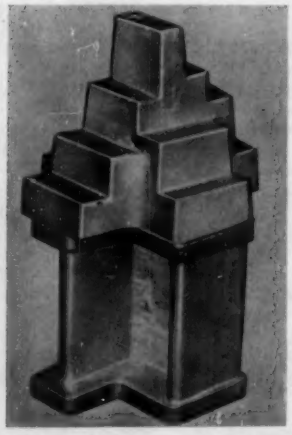
TWO NEW types of corrosion inhibitors are being manufactured and marketed by John B. Moore Corp., under an assignment from the originators, Princeton Paint Laboratories. Both of the inhibitors are effective on ferrous and non-ferrous metals. The "CI-103" is a film-former which dries tack-free in three to four minutes and may be removed easily by simple aromatic petroleum solvent wash. "CI-104" is neither a coating nor a film-former, but leaves an unusually durable deposit of mono-molecular dimension as a moisture barrier on the treated surface.



PLASTIC CLUB TEMPLES

(Use Key # 641 on Inquiry Card on page 85)

NEW EYE SAVERS Executive Safety Spectacles are now available with plastic Club Temples which fit and flatter almost every face, according to Watchemoket Optical Co., Inc. This provides a choice of Retrax or Club Temples. Executive Safety Spectacles also offer a choice of interchangeable shatterproof methacrylate lenses, guaranteed optically perfect. Choice of lenses include clear, for indoor hazardous areas; light green, for average sunlight; medium green, for bright sunlight; gold for night driving. Extreme light weight and perfect balance combined with the advantages of a universal nose bridge which rests on the nose without pressure or pinching provide featherlight wearing ease. Each pair of spectacles has its own leatherette case large enough to hold extra sets of lenses in individual protective pouches.



CHIP ABSORBING SET-UP BLOCKS

(Use Key # 642 on Inquiry Card on page 85)

THE DEVELOPMENT of new aluminum alloy multi-step set-up blocks which save machine set-up time and protect expensive machine tables from scratches and nicks is announced by Jergens Tool Specialty Co. Softer than the machine table, these new blocks absorb metal chips and even if dropped will not injure the machine table.

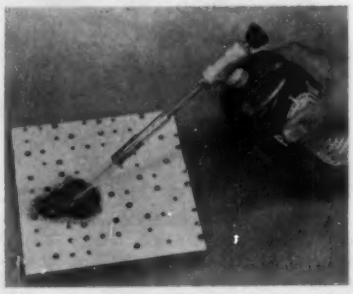
According to the manufacturer the blocks withstand great weight under clamping pressures and are designed for use on jib bores, boring mills, drill presses, milling machines, planers, etc. They hold work from zero to 3" and can be mounted on 3" high Jergens Risers to pyramid to any desired height. The tee-shape requires minimum table space and allows rotation of the set-up block to coincide with the sturdy tee base for maximum rigidity. The multi-step set-up block is positively locked to the riser by means of a male boss and female cavity.

MAHOGANY BULLETIN BOARDS

(Use Key # 643 on Inquiry Card on page 85)

INDUSTRIAL Products Company has announced a line of bulletin boards constructed of Philippine mahogany and attractively finished in high gloss lacquer, for office and plant use, institutions, schools, hospitals and other locations.

Style No. 70 is of cabinet type construction, 28" x 35" x 4" inside depth, with cork posting surface, and hinged glass door to protect contents. Sign panel is of white opaque plastic and may be furnished with any desired wording. Concealed flucrescent tube provides light through sign panel and over the entire inner area. Flush type boards of the same materials are also available from stock. Special sizes, both types, to customer's specification.



FIRE-RETARDANT PAINT

(Use Key # 644 on Inquiry Card on page 85)

A FIRE-RETARDANT paint which provides flame protection when applied to interior walls, ceilings and trim surfaces has been announced by The Warren Refining & Chemical Company. The coating, called Warco Duo-Tex, protects against flash fires by forming an insulating blanket which shields combustible surfaces from the flame. Like an ordinary paint, it may be brushed or sprayed on, dries to a rich flat finish, and is washable. It resists mildew and fungus growth and will maintain its fire-retardant quality with age.

Composed of an intumescent resin base, the paint will swell, char, and bubble, producing a protective charred ash which guards the surface from the flame. Available in white and twelve basic pastel shades, the coating carries the Underwriters' Laboratory seal and meets the fire-resistant demands of Federal Government Specification SSA-118A. It can be used on accoustical tile and may be recoated with any kind of interior paint without losing its protective quality.

DWARF DUST COLLECTOR

(Use Key # 645 on Inquiry Card on page 85)

CRAFTOOLS INC. announces a Dwarf Dust Collector Unit for application on small machines where dust presents a special problem, as in small shops, laboratories, tool rooms, etc. The unit handles 230 cu. ft. of air per minute and separates the dust so that the heavy particles are retained in an expansion chamber while fine dust is collected in a filter bag. An air outlet is furnished for cleaned air discharge to the outside atmosphere if required.

The unit is designed so that one or two machines can be connected with the collector. These Dust Units can be adapted to any machine, such as belts and disc sanders, circular saw tables, buffers and grinders, metal and wood band saws, routers, abrasive cut-offs, radial saws, milling machines, surface and tool grinders, tile and ceramic cut-offs, or packaging machines, by the use of a simple standard hood.

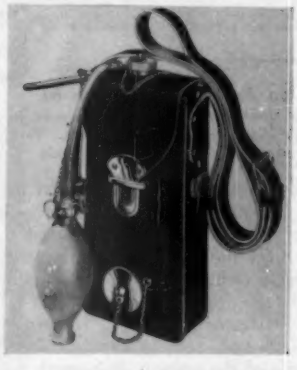
Attachments are available that convert the unit into a vacuum for maintaining and cleaning all machines in the shop. A set of casters are also available for making the unit mobile.

APPROVED PLASTIC PANELS

(Use Key # 646 on Inquiry Card on page 85)

FIBERGLASS-REINFORCED daylighting panels, listed by Underwriters' Laboratories Inc., are being manufactured by the Resolite Corporation, under the trade name of Fire-Snuf. The panels have a flame spread rating of below 75. This is equivalent to the Building Officials Conference of America classification of "slow burning" and means that they meet the safety requirements for most factories, schools, institutions and other coded areas.

Fire-Snuf panels are self-extinguishing and will not support combustion. They are molded of fiberglass and Hetron, a permanently self-extinguishing polyester resin. Under the heat of a blow torch the panels will ignite, but they extinguish themselves almost immediately upon removal of the source of heat and flame. The translucent panels can be used as skylights, sidewalls and partitions in industrial, commercial and institutional buildings where codes call for a flame spread rating of below 75 or where fire hazards are unusual. They are shatterproof and retain all other features of standard Resolite, including high strength, stability and load bearing characteristics. They are molded in flat sheets and in all standard building corrugations in lengths up to 13 feet and widths up to 42 inches.



METHANE INDICATOR

(Use Key # 647 on Inquiry Card on page 85)

NATIONAL Mine Service Company is the exclusive distributor in this country for the U. S. Bureau of Mines approved Riken Methane Indicator. Embodying the principles of optical projection in the determination of methane content in mine air, the instrument enables one without special training to make readings in less than a minute accurate to within one tenth of one percent. The direct-reading scale ranges from 0.0 percent to 6.0 percent.

An inexpensive, single-cell flashlight battery and bulb for illumination of the scale and a replaceable absorbent cartridge to remove moisture from the air sample are the only renewable items. No combustion of the gas sample on a hot wire—no recalibration—no dependence or connection with a cap lamp battery of varying voltage simplifies the operation and secures results comparable with highly-technical laboratory equipment. It weighs only 2½ pounds and comes in a serviceable leather case with shoulder strap.

PLASTIC SHIELD-GOGGLE

(Use Key # 648 on Inquiry Card on page 85)

A LIGHTWEIGHT plastic goggle that provides wide angle vision and an increased area of protection is announced by Pulmosan Safety Equipment Corp. Called the "Secureye Shield," the new goggle is designed to fit comfortably around the eyes, nose-bridge, upper face and temples. There are no seams or joints to obstruct vision and prescription glasses can easily be worn underneath.

Its rigid and tough construction affords full eye protection against flying particles. The transparent Lumarith lens, available in either clear or green, is rounded and sloped to deflect particles. An opaque green visor eliminates overhead glare. The exclusive foam rubber sweatband and the elastic headband are replaceable.

ADHESIVE NUMBERS AND LETTERS

(Use Key # 649 on Inquiry Card on page 85)

INDIVIDUAL, self-sticking Numbers and Letters, in six sizes from ½ to 5 inches high, mounted on handy dispenser cards, have been developed by the W. H. Brady Co. The Numbers and Letters are available in two colors: black on white and black on yellow; six sizes: ½", ¾", 1½", 2¼", 3½" and 5" high; the alphabet, numbers 0 through 9 and dashes.

They are made of Brady #B-500 All-Temperature impregnated cotton cloth with a temperature-resistant pressure-sensitive adhesive, mounted on handy dispenser cards which protect the adhesive until used. They will stick permanently to any clean, dry surface.

Brady Numbers and Letters were developed to fill the need for a simple, low cost method of marking bays, posts, shelter areas, fire extinguishers and other safety equipment. Signs and special safety messages can be put up in minutes in the office and shop for identification, safety and maintenance. Free samples available.

STAIR CLIMBER TRUCK

(Use Key # 650 on Inquiry Card on page 85)

THE FAIRBANKS CO. has introduced an all-steel "Stairmaster" Appliance Truck with five features that provide safer and easier handling of appliances of all types and sizes.

Greater protection for appliances is provided by the new belt tightener that has eliminated the use of buckles and substituted a simple automatic positive lock. Application of proper tension on belt is accomplished through hand wheel which also keeps the extra long belt neatly rolled out of the way. Three position adjustment of belt accommodates appliances of any height.

Protection of operator, up or down stairs, is provided by a new stair-climber device. It walks the appliances over the steps with no rubbing, rolling or sliding friction between the climber and the step. Rubber rockers of stair-climber are also tangent with wheel, eliminating hump or bump as truck is moved over stair. Rockers are a neutral color that will not mark the steps. The offset of stair-climber allows the operator to handle loads on stairs in a more upright position and at a better balance decreasing fatigue.

Tubular-steel frame is sheathed in non-marking rubber bumper stock and nose plate is felt-lined for added protection of appliances.

APPROVED SAFETY
guards for all
DANGEROUS MACHINES
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DUST COLLECTORS
for all dusts
PREVENTS FIRES
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SAFETY CONGRESS
Oct. 17th to 21st
Conrad Hilton Hotel

(Use Key # K-64 on Inquiry Card on page 85)

YOU CAN'T FALL
It's a Life Saver

IT LOCKS—IT HOLDS

SAFETY DEVICE FOR LADDERS
Prevents death and injuries from falling.

Inexpensive: Easy to install. Clamps on ladder rung or structures with peg steps or framework etc. No welding or cutting.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

Simple to operate. No upkeep. Requires no attention from climber.

Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof.

In use throughout country and abroad for approximately 6 years.

Patented. Manufactured only by

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BURBANK, CALIFORNIA

(Use Key # K-65 on Inquiry Card on page 85)

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Oil-Dri Corp. of America	50	Burlingame-Grossman, Chicago
Pac-Kit Company, The	76	
Patent Scaffolding Co., The	14	Glenn, Jordan, Stoetzel, Inc., Chicago
Practical Manufacturing Company	75	Fischbein Advertising Agency, Minneapolis
Pyrene Manufacturing Co.	88	Gray & Rogers, Philadelphia
Quabaug Rubber Co.	15	
R & P Products Inc.	72	
Resco Wooden Sole Shoe Co.	83	
Ruemelin Mfg. Co.	72	Paulson-Gerlach & Associates, Inc., Milwaukee
Safety Box Toe Co.	52 & 53	The Church Green Co., Boston
Safety Tower Ladder Co.	82 & 102	Walter DuBree Advertising Agency, Los Angeles
Sargent-Sowell, Inc.	87	W. J. Springfield, Dallas
Scott Aviation Corp.	47	Melvin F. Hall Advertising Agency, Inc., Buffalo
Searjeant Metal Products, Inc.	84	Kamb, Meteyer Advertising Agency, Rochester
Silicone Paper Co. of America Inc., The	5	Package Advertising Co., New York
Smith & Son, Inc., A	65	John B. Ferguson, Jr., Philadelphia
Spencer Turbine Company, The	73	W. L. Towne, Stamford
Standard Industrial Products Co.	51	Bartz Advertising Agency, Peoria
Stonehouse Signs Inc.	11	Walter DuBree Advertising Agency, Los Angeles
Surety Rubber Company, The	65	H. M. Klingensmith Co., Inc.
Surty Mfg. Co., Inc., The	102	
Torit Manufacturing Co.	48	Kerker-Peterson and Associates, Minneapolis
United States Envelope Co.	29	Wm. B. Remington, Inc., Springfield
United States Safety Service Co.	33	Phillips-Reick-Fardon, Kansas City
Wagco Products Inc.	70	
Wallace Optical Company Inc.	67	A. Hemsing, Detroit
Watchemoket Optical Co., Inc.	20 & 21	Richard Thorndike Agency, Providence
Wilkins Co., Inc., The	1	Laux Advertising, Inc., Ithaca
Williams Jewelry & Mfg. Co.	84	Vernon S. Weiler, Chicago
Willson Products, Inc.	40	Beaumont, Heller & Sperling, Inc., Reading
Wyandotte Chemicals Corp.	19	Brooke, Smith, French & Dorrance, Inc., Detroit

Answers to "How Do You Look at an Accident" on page 87

Now that you have passed judgment on these accidents, let's review the answer to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

9. Caused by our driver. This is a common occurrence, and our driver is quite sincere in stating that the other driver came "out of nowhere" going like a streak; however, the consequences demonstrated that the vehicle **was** coming. During the approach to the intersection, the other vehicle was obscured from view by our left corner post. The blind spot caused by the door post or corner post makes it imperative to check the deadly blind spot. And this is an explanation why a "full" stop is so vital for safety at required stops—it permits vehicles to emerge from the blind spot.

10. Caused by our driver. The technique of turning right was faulty on the part of our driver. The fact that the other vehicle attempted to pass on the right indicates that our vehicle either swerved out or started the turn from the wrong lane. This results from attempting to turn at a speed not commensurate with the angle of the corner. It is much easier to execute a sharp right turn at three or four miles an hour, than at 10 or 15. To attempt a right corner at 20 miles an hour requires a considerably larger arc than that afforded by the usual right-angled corner. Had our driver started his turn at a much slower speed, he could have "crowded" the right curb, discouraging anyone from passing on the right.

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2627 Seventh Avenue, South

BOSTON, MASS.
General Equipment Corporation
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BUFFALO, N. Y.
The Watson Company
1443 Main Street

CHICAGO, ILL.
Universal Safety Equipment Co.
5135 Diversey

CINCINNATI, OHIO
Williams & Co., Inc.
3231 Fredonia Avenue

CLEVELAND, OHIO
Williams & Co., Inc.
3700 Perkins Avenue

COLUMBUS, OHIO
Williams & Co., Inc.
251 Williams Avenue

DALLAS, TEXAS
Guardian Safety Equipment Co.
900 Jefferson Tower Bldg.

DETROIT, MICH.
Averill Equipment Company
19225 Consent Avenue

HOUSTON, TEXAS
Guardian Safety Equipment Co.
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Safety, Incorporated
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KNOXVILLE, TENN.
Safety Equipment Distributing Co.
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Fire Appliance & Safety Co.
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LOS ANGELES, CALIF.
Guardian Safety Equipment Co.
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Williams & Co., Inc.
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MILWAUKEE, WIS.
Universal Safety Equipment Co.
3155 S. 7th Street

ORANGE, N. J.
Guardian Safety Equipment Co.
400 S. Jefferson Street

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Universal Safety Equipment Co.
116 S. Garfield

PHILADELPHIA, PA.
Guardian Safety Equipment Co.
214 S. 45th Street

PITTSBURGH, PA.
Williams & Co., Inc.
901 Pennsylvania Avenue

ST. LOUIS, MO.
Safety, Inc.
2608 Olive Street

ST. PAUL, MINN.
Continental Safety Equipment, Inc.
1551 Selby Ave.

SALT LAKE CITY, UTAH
Universal Fire & Safety
Equipment Co., Box 1587

SAN MATEO, CALIF.
Guardian Safety Equipment Co.
220 Third Avenue

SPOKANE, WASH.
Spokane Safety Appliances
North 219 Division Street

TOLEDO, OHIO
Williams & Co., Inc.
945 Kane Street

TULSA, OKLA.
Guardian Safety Equipment Co.
1742 S. Main Street

WICHITA, KANS.
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725 S. Broadway

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Safety Equipment S. A.
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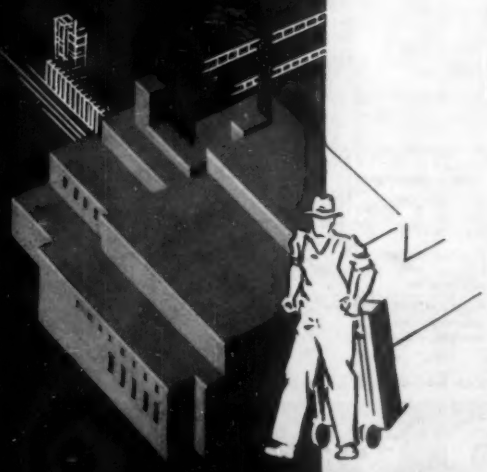

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